

Disturbing Facts—But a Remedy

FRANK L. STILES, Chairman of the Race Committee of the Bayside (Long Island) Yacht Club, one of the liveliest chairmen of our most active eastern clubs, in his annual report on racing activities has so well expressed a condition existing almost everywhere, that we think it worth giving more than passing attention to and therefore, to express our own approval, we are printing his remarks in full below. We also agree with Mr. Stiles' suggestions for the remedy: Give us more young blood; teach the boys (and girls) what a red-blooded sport yachting is—an 80-foot schooner or a Gar Jr. Flyer isn't necessary to begin with. Many of the best sailors we have today started with a soap box and a sheet!

Carl G. Fisher
aboard his ex-
press cruiser
Shadow F., off
Miami Beach,
Florida



**MoToR
BoatInG**

119 WEST 40th STREET
NEW YORK N. Y.

"The Bee class is dead. The Bayside Birds gave one flutter and expired. The largest number of stars starting in a race was only seven. We have no youngsters coming on to carry our burgee to victory. Another fact which does not appear in a tabulation of results is that six of the 'stars' did not qualify in the Bayside Championship series by starting in at least five of the seven races. To sum up, the racing this year in our home waters has been the least interesting for many seasons. What is the cause? And, if the cause can be discovered, what is the remedy? Your Chairman believes that he knows the cause and he offers the remedy.

"It is his firm conviction that our condition is the direct result of our having no young men and women ready to take the places of their elders, who, for one reason or another, drop out. Matrimony, babies or rheumatism, get our racing skippers one by one and there is no one standing by to seize the stick and carry on.

"Life is easy for the youth of today. His amusements are served on a silver tray. He does not have to dig up his own fun and in this phase of his life he has become soft. He is not learning to 'roll his own.' This, however, is only half the story. You and I are the villains in the other half. Have we, as yachtsmen, turned a hand to help this youth? Have we pointed east of Execution over the blue water and said to him, 'There is life; there is adventure. Come with me and learn to lick the salt spray from your lips and call it good.' Have we? We have not. Have we showed him a black squall and the glory of winning back to life by his own cool judgment and the strength of his own arm? We have not. Have we lain with him on a summer night gazing up and up beyond the farthest star until his inmost soul knows that the Father, the God of All the Seas, is looking down on him from just the other side of the Milky Way? Have we? We have not. It is up to us. We cannot say to these boys, 'Go.' We must say, 'Come.'

"And right here is your Chairman's remedy. A real sailorman is a growth, not a manufactured article. 'Catch 'em young; treat 'em rough; tell 'em nothing and make 'em like it!' The Club needs sailors, Uncle Sam needs sailors and you and I must nurture them. The Club, through its Board of Governors, has made a start, which will be followed up during the Winter, toward launching next Spring a small inexpensive, one-design class for the youngsters. Good for the Board. But it is the work of the individual members to catch those same youngsters. The Regatta Committee can promise them plenty of excitement.

"However, we are not downhearted. We have our cloud, it is true, but that cloud is silver lined. The silver is in the cups which we won this season. The championship of the Western Long Island Sound Fleet of the Star Class Association, the championship of Long Island Sound in the Star class and the national championship in the same class. Add to these the first and third places in the Bayside-Block Island Auxiliary Handicap and we find silver enough to satisfy any self-respecting yacht club."—CHARLES F. CHAPMAN, Editor.

C O N T E N T S

M A R C H 1 9 2 3

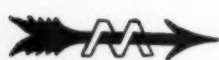
VOLUME XXXI

No. 3

<i>Adventures With the Natives.....</i>	13-15
<i>The Open Season for the Open Boat.....</i>	16-17
<i>For Speed You Must Have Power.....</i>	18
<i>Mystic, for Fishing in Florida.....</i>	19
<i>Strange Motor Boats from Near and Far.....</i>	20-21
<i>Cruising in a Converted Motor Sailer.....</i>	22
<i>Copper Colored Masters of the Sea.....</i>	23-24
<i>Scout, a Real Cruiser.....</i>	25
<i>Keeping Track of Time at Sea.....</i>	26-27
<i>Col. Hayward Makes Fisher-Allison Decision .</i>	28
<i>Dolores, an Auxiliary Cruising Knockabout... </i>	29-32
<i>Small Motor Boats, Their Care, Construction and Equipment</i>	33-36
<i>Prize Question No. 1: Building a Folding Table Is Simple.....</i>	33-34
<i>Prize Question No. 2: Reconditioning and Overhauling Your Engine.....</i>	35-36
<i>Potential Market for Marine Engines in China..</i>	37-38
<i>Questions and Answers on Lesson No. 12.....</i>	39
<i>Motor Boatman's Chart No. 41, Georgia Coast —From St. Helena to Doboy Sounds.....</i>	40
<i>Sailing 50-Mile Boats Like Riding Wild Waves</i>	41
<i>Yachting Booming in Southern California.....</i>	42
<i>Yard & Shop.....</i>	43-44

See page 118 for Summary of New Orleans Regatta.

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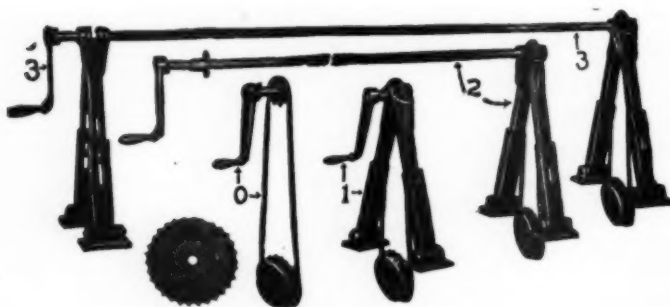
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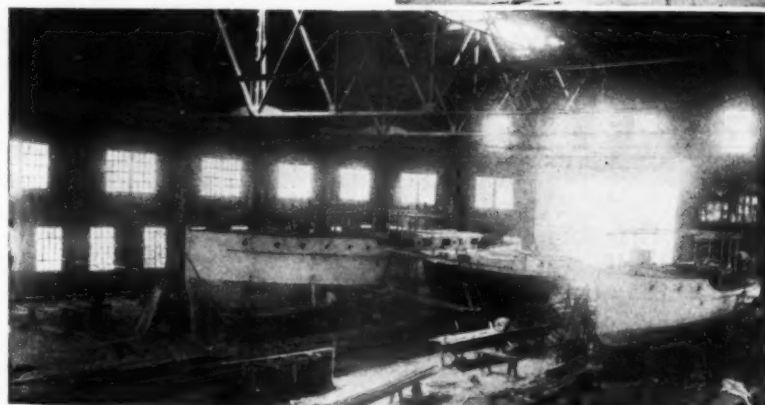
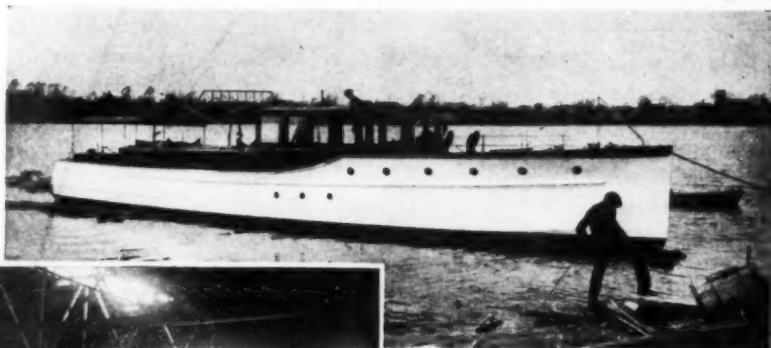
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62-footer



76-footer

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CRUISERS RUNABOUTS



54-footer

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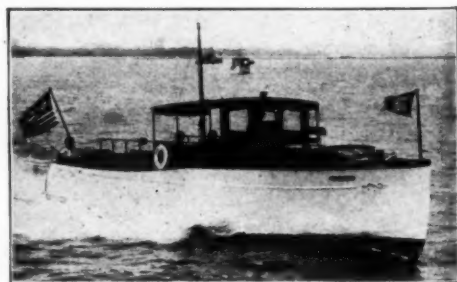
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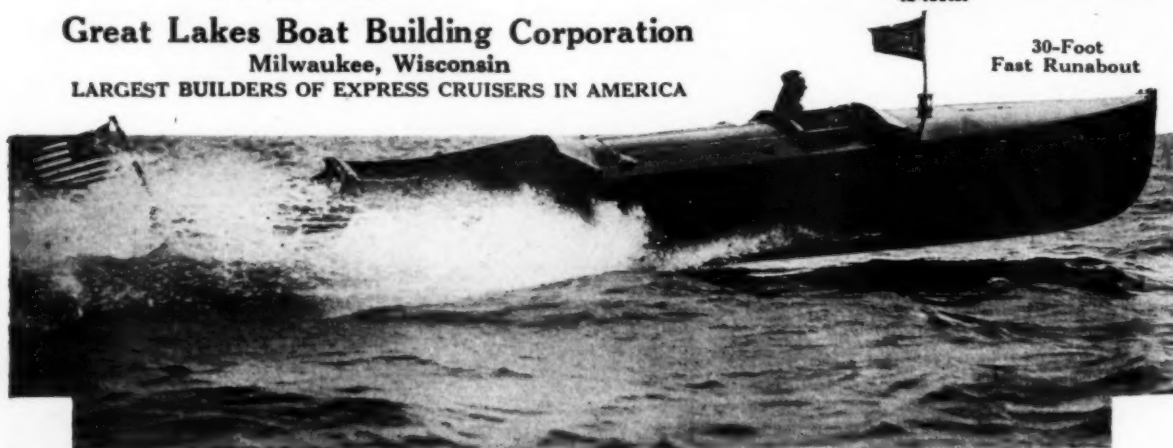
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THE Great Lakes organization is at your service. A comprehensive report will be submitted on your requirements if you will advise as to the number of people to be accommodated and the speed desired.

Possibly an analysis of the 54-foot Standardized Express Cruiser would be helpful in crystallizing your ideas, as it is recognized everywhere as the utmost obtainable in seaworthiness, comfort, accommodations and luxury in a boat of its size and type. Bulletin No. 251 fully describes the 54-footer.



42-footer

30-Foot
Fast Runabout

Adventures with the Natives

Hippocampus, Continuing Her Cruise Among the San Blas Indians,
Finds That They Are Born Pilots—She Grounds for the First Time

By Alfred F. Loomis

Photographs by S. C. Russell and the Author

HAVING inspected a village of the San Blas group under the supervision of their Panamanian rulers and found the inhabitants repressed and somewhat surly, Mrs. Loomis and I, cruising in Hippocampus, were anxious to visit the Indians alone. But we did not fall in with the suggestion of an old buck who boarded us as we were about to leave the island of Porvenir and offered to pilot us down the gulf. He and his wife and their three children and their friend came alongside in a cayuca, and he said, gruffly:

"I take you Nargana."

"No you don't," I replied, quickly, for we were anxious to get under way. "I take myself."

"No," said the Indian. "I go Nargana too. I pilot you," and he turned to help his children to Hippo's deck.

Here was a situation. If he had made up his mind to come and meant to do so at the point of a machete, how was I to stop him? Undecided whether to push him overboard (which might have made us unpopular with all Indians who chanced to hear of the indignity) or to appeal to the Panamanians on the island, I watched the transfer of the children in bewilderment until Jo came to my rescue.

"Try a box of crackers on them," she suggested. "That's what they want."

Put it down to woman's intuition if you will, but the fact is that when the crackers were brought on deck and distributed and I had explained to the Indian that we would take two days to make the thirty miles to Nargana, he handed his progeny back into the cayuca, thanked us, and paddled off.

After that, we lost no time in getting up the anchor. Our destination for the day was the uninhabited group of Lemon Cays lying to eastward of the San Blas port of entry. Thither we sailed, lazily, leisurely, for we had all day ahead of us, and were content to let the gentle air take us at its pleasure.

So, avoiding the reefs which spring up from unseen depths and reveal their wickedness as a patch of brown beneath the surface of the water, we came up to leeward of the islands and tacked toward a narrow passage leading to a quiet anchorage. On the first try we allowed too little room for leeway, and had to head about or run the risk of poking our bilge into the sand, but then, having edged precariously near a reef on the opposite side, we came about again on the port tack, and doused the jib to hug the wind more closely.

Jo had the tiller, as she always does when there is a promontory or a buoy to be gained, and she made fine, skillful sailing of it. But as we entered the narrowest part and saw the promise of the broad anchorage just beyond, she luffed almost into stays and I, watching the bottom from the bow, thought we would lose steerage way and come to grief. But as we made crabwise for the bank Jo did the only thing possible, letting the bow fall away from the wind until we had gathered speed, and then, literally hugging the beach, luffing up again and sidling past the projecting point of sand.

It was raining heavily as we completed this maneuver and came to anchor, but this did not dampen the curiosity of two Indian fishermen who had watched us from a distance and now paddled alongside.

One of them spoke English. "You been here before?" he asked.

"No," I replied. "Shall we lie here quietly?"

"Oh sure," said the Indian. "But you come here now for first time and no pilot?"

I needn't repeat the conversation in further detail, for the reader whose wife has taken him through a ticklish situation in a sailboat for the first or the fiftieth time will already understand how expansive I felt under the Indian's admiring questions.

Our young friends, one of whom wore huge gold disks in his



Indian boy at Nargana, where they wear clothes, and a giant crawfish



San Blas Indian girls with gold rings in their noses

ears which would one day become the property of his bride, now helped me to raise the awning, being immensely interested, as all other Indians have been, in the details of the rigging. But I had a story to write, and, after a few minutes of disjointed talk, I bade them goodbye with a handful of crackers. They left good-humoredly, prophesying truly that it would stop raining in a few minutes and stay stopped for the day, and although they fished near us and must have heard the perplexing hammer of the typewriter in the cabin, did not visit us again that day.

In the morning, however, when I was about to turn to again on the story, they came alongside with a kweenie which they wished to sell. The kweenie was a red squirrel, tied about the middle, and as it seemed no more anxious to be sold than we were to buy it, we brought out the crackers again. Next Jo was assailed by a swarm of sandflies which drove her to desperation while leaving me undisturbed, and if we had needed further incentive to leave so populous a place it was given by a tribe of Indians who descended upon us in two cayucas, with, no doubt, a whole family of kweenies to sell.

So we hastily weighed anchor, started the motor, and resorted to flight, not stopping until there were miles of blue water between us and the nearest island. There (wherever it was), while the spread sails flapped idly in a breathless air, I continued my writing in the cabin, accompanied by Jo in the cockpit, whistling for the wind.

When at length a breeze drifted casually in our direction Jo took the tiller and I, writing *finis* to the story, busied myself with chart, compass, and dividers. In a country where there are no aids to navigation and where one island looks pretty much like the next—being a strip of glistening beach with the waves curling lazily over the offlying coral reef, and a cluster of palms partially concealing a thatched hut—under these conditions sailing is a matter of some interest and of unusual activity.

At such times I wonder how I ever manage to make a strange harbor without bouncing over a few intervening sand bars. It is no trick at all to make two bearings cross so that my position is presumably fixed, but when I sight a third object and transfer its bearing to the chart, it never by any chance coincides with the

first two. It shows me that I had mistaken their identity and sends me frantically to work finding other ones of greater reliability. Meanwhile the Hippo sails on and the landmarks assume new aspects, and I hop like a flea on a monk from compass to chart and back again, hoping against hope that I shall at length sight something that is unmistakable.

Such an object was a small island surmounted by a lone palm, indicated on the chart, and unlike any other cay in the vicinity. But so tall was the palm and so hazy the horizon that at first sight I could not determine whether it lay before or behind other less conspicuous islands. Finally we fixed our position by the simple expedient of passing uncomfortably close to an outjutting shoal, and from then on until our arrival in Rio Diablo (or Nargana) we sailed with full knowledge of where we were.

These last few minutes of the day's run were made delightful by a phenomenon which occurs so rarely that it is never forgotten. Anticipating a slow beat up a rather restricted passage, we were greeted instead by a variable wind that veered astern as we changed our course and bowled us along to the very entrance of the harbor.

There it encountered a back draft from the high mountains of the Main, but we were able to tack a few times and anchor in a land-locked basin without resorting to the motor.

Indians are as shy about photographs as they are anxious to be pilots



A strip of glistening beach with the waves curling lazily over the offlying reefs

Three miles
from its mouth
the Rio Diablo
is a shallow
stream



Before coming to rest we had been boarded by a member of the Panamanian police, armed like a junior arsenal and equipped as to feet with a pair of hob-nailed boots. Beyond directing him to stand on a coil of line so that his feet would not mar the canvas covering of our deck, I paid no attention to him, being busy with sheets and halliards; but as the anchor went down he recovered from his enforced trance, shook hands with me, and demanded our papers. There seemed to be something else on his mind besides his campaign hat, but the difference of our languages prevented his getting it off.

When, a few minutes later, however, we followed the man and our letter of introduction to the corrugated iron building that does duty as police headquarters, barracks, and custom house, we were greeted by the question.

"Why did you think of not stopping here before the policeman went on board?"

"Why did I what?" I asked the Panamanian inspector in perplexity.

"You turned around in the channel," he explained.

"Oh that," I said. And I told him what every Indian sailor undoubtedly knew without explanation—that we had missed stays and had had to wear ship in the channel to avoid bumping the shore.

His suspicions allayed, the inspector then informed us that in obedience to the instructions contained in our letter from the lieutenant at Porvenir he would place a guide and canoe at our disposal in the morning. In the meantime we might walk around and inspect the model town of Nargana at our pleasure. He was a pleasant little man, only a shade too suggestive of the lap dog of indiscriminate breed which barked in a fat, vindictive manner as we left his office.

Our tour of the island was not attended by the procession which marked our visit to Carti Village, for Nargana is the show place of the San Blas group, and the few natives who have remained on the cay under the direct domination of the Panamanians are used to white visitors and display little curiosity. Nor is the island similar to the true Indian village in other respects, for the streets are wide and evenly spaced, and there is an appearance of civilization which does not stop short of gingham trousers on the brown legs of the little urchins.

Although the hour was five in the afternoon we found a primary school in full session when we stumbled into it, and my heart stirred in sympathy for these savage children whom education had torn from their dugout canoes and

(Continued on page 72)



Crude press in
which the In-
dians squeeze
the juice from
the sugar cane



The Open Season for the Open Boat

Many Cruisers and All Sailing
Yachts Nowadays Have a Motor
Tender Which is Either Towed
or Carried on the Mothership

The color, the sociability, and the life of the annual cruise centers in the tender, and its appearance is an indication of the character of the yacht to which it belongs



We don't know what actually happened when the photographer snapped this picture, but it is evident from the owner's upraised hand, the rapt attention of the coxswain, and the startled, upgazing pose of the gentleman in the fedora that it was a crucial moment. If it were a still picture from a movie we'd guess that affairs were quickly moving to a dramatic climax



Of course, if you insist upon having a captain and crew to operate your gig, you can show as much style and class as an Admiral of the Navy



But you can get practically the same results with an open tender and a little one-cylinder kicker under the gentle ministrations of your wife



"Four's too many and five's not allowed"—It looks as if Daddy would have to swim out or wait for the next trip



You know the rule, that the highest rank sits farthest aft? This sailor in whites knows it too

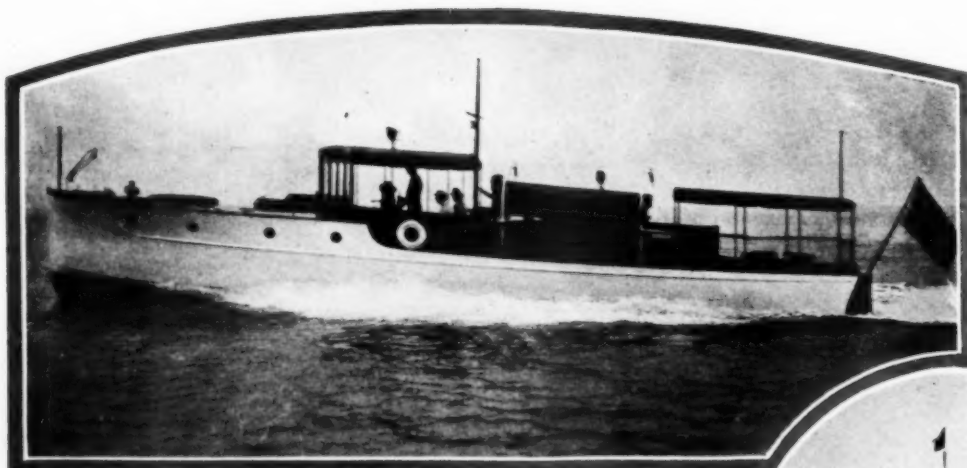
For Speed You Must Have Power

Recent Tendencies
Sterling Engines

Are All Toward Fast Boats—New
Depended Upon to Supply Necessary Pep

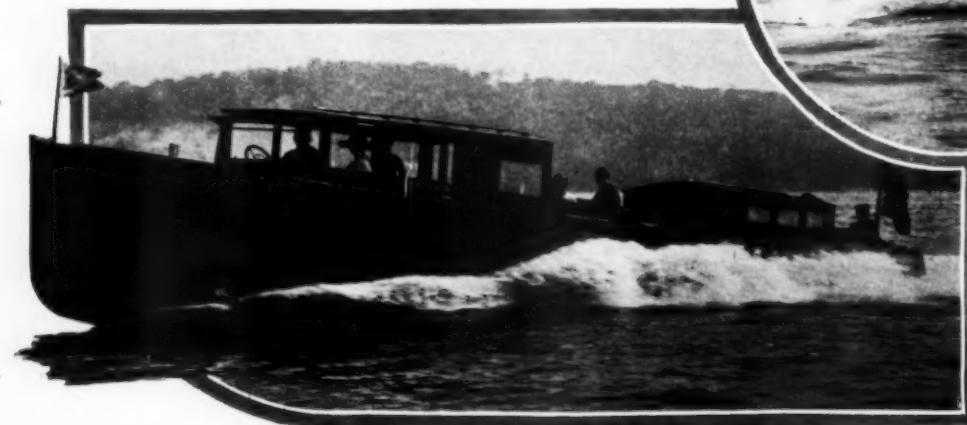


Paul Nicholson's new 68-foot cruiser Harpoon II sailing from Providence, is one of the most admired yachts in the east. She is most completely equipped in every respect. Two six-cylinder Sterling Dolphins develop 225 h.p. each and drive her along at better than 22 miles



Uarco is one of the standardized 54-foot Great Lakes Cruisers. She does 26½ miles with two Sterling Sea Gulls of six cylinders each. The combination of boat and engine can't be beaten

F. O. Allen, also of Providence, had Wm. H. Hand design his new cruiser Dog Star. This 40-footer, built by F. S. Nock is likewise equipped with a six-cylinder dual valve Sterling. This boat can be handled by the owner with ease



A busy craft is Katoura. She is used daily by Robert E. Tod, Commissioner of Immigration, Port of New York, to carry him from his home at Port Washington to Ellis Island. Two dual valve Sterlings drive her at 29 miles

Photographs by M. Rosenfeld

Mystic has a clean lined hull which is easily driven with a minimum of power. There are two six-cylinder Speedway engines which drive her at better than 18 miles

Mystic, for Fishing In Florida

An Unusual Combination Type
Cruising and Fishing Craft
Adaptable to Pleasure and
Sport Purposes



Especial attention has been given to features for which the boat is particularly intended. Swivel chairs in the cockpit and a metal lined fish well at the stern will appeal to the experienced fisherman



SPECIALISTS in the design and construction of all types of pleasure craft, the Consolidated Shipbuilding Corporation of Morris Heights, N. Y., decided a few years ago, to develop a class of fishing boat suitable for Florida service. It was desired to bring out a combination boat suitable in the south for deep sea fishing and day sailing, as well as in the North for general cruising purposes.

The 40-footer illustrated is a typical example of this development and the details of the cockpit in which two swivel fishing chairs are located, have been carefully thought out. The bridge-deck amidships is arranged with wicker chairs and seats for other guests. Another feature which has been carefully developed is the metal-lined fish box under the after deck. The power plant consists of two six-cylinder Speedway engines carried under the bridge deck.

Strange Motor Boats From Near and Far

Internal Combustion Engines
are Put to Odd Uses as Shown
in a Collection of Pictures
Taken at Home and Abroad



Frank Gheen goes up in the air. Our old friend who will be remembered as the racing skipper of the series of fast cruisers which competed in long distance races some ten or twelve years ago, has a new hobby. He is operating a flying school down on the sand beach at Daytona, Florida, and making runs to points along the coast. Since he and his companions are Elks they all flew to a recent convention as shown in our illustration



This French amphibious tank carries five passengers overland and can swim ordinary rivers and streams without difficulty

The world's largest motor ship Afrika is propelled by powerful twin Diesel motors. All auxiliaries are electrically driven by generators operated by smaller Diesel engines. No steam equipment of any kind is carried on board



Photograph by Kadel & Herbert



Photograph by International

Another peculiar French idea for marine propulsion. A large aerial propeller carried on a high mast is driven by power gathered from the wind. A small screw propeller is driven by the power generated and drives the boat. It is claimed the power of the wind itself is used to drive the boat against it at a rapid rate



The Christie amphibious wheel caterpillar tank afloat on the waters of the Hudson River. Detachable marine propellers are applied to projecting shafts when the tank is required to navigate as a boat in deep water

Photographs by International



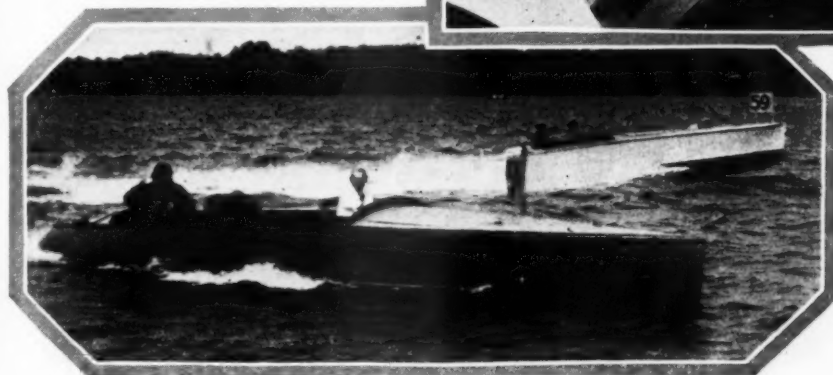
After running ashore the tank climbed the sides of the Palisade Mountains, made a smoke screen and then returned again to the waters of the Hudson. It is capable of climbing embankments, jumping trenches, and cutting wire entanglements under fire



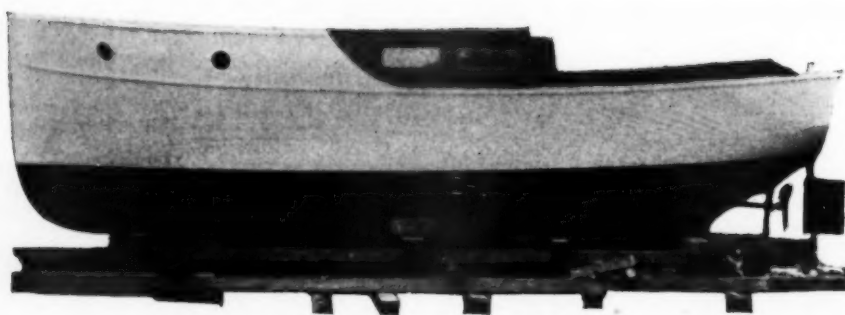
The new battle tank exhibited by Walter Christie recently near New York. It can run on ordinary wheels on paved roads, and for rough cross country going it makes use of caterpillar tractors. It can be driven into the water and there driven by submerged propellers. It is considered the latest improvement in armored tanks, and carries a full crew of men, guns, provisions, and ammunition to last for twenty-four hours. Prominent officials of the United States Army, who witnessed the test declared that it will revolutionize certain phases of warfare



Photographs by W. Gircke



Exciting scenes at a regatta of the German Motor Yacht Clubs on the Scharmilzel Sea. The runabout Exquisit proved to be the winner of the race. A feature which appeals to the Editor as being worthy of duplication on this side of the ocean is that the racing numbers are painted on heavy cards and so secured that they can be readily distinguished at all times



The converted motor sailer on the ways before launching

Cruising In a Converted Motor Sailer

Many Serviceable Small Boats in the Navy Surplus Lend
Themselves to Alteration Into Useful Little Cruisers

BOATMEN generally are familiar with the 24-foot motor sailers of which a great number were sold by the Navy Department, so it will not be necessary to go into details regarding their construction. They are ideal craft for remodelling into either auxiliaries or motor cruisers, so with the thought in mind of making it into the most practical craft every type was considered. It finally centered on a combination raised deck and trunk cabin type with self-bailing cockpit. This type allows much more air and light than the straight raised deck model. A self-bailing cockpit seems out of place on such a small



being added and the transom was built up 8 inches as were the sides for a distance of 13 feet forward. The raised deck portion was built up 18 inches above that, with the proper amount of flare. The cabin top was given an 8-inch crown. The trunk cabin is 4½ feet long, with two windows. The inside has the usual layout, the chain locker being forward and the water tank under. The toilet is immediately aft and then the cabin with the engine at the aft end, galley on the port side and companionway on the starboard.

Much has been written against the necessity for ice boxes on small boats, but this boat will have one. The cabin will contain two spring berths over lockers, and probably two pipe berths will form uppers. This compartment is lighted by two ports and four windows. The self-bailing cockpit is 7 feet long and has a slat seat with lazy back across the aft end and has sufficient space for four chairs. The stern deck is 18 inches long, the tiller being beneath and projecting through the transom. Ordinarily a wooden outboard rudder is used, but a regular stock rudder

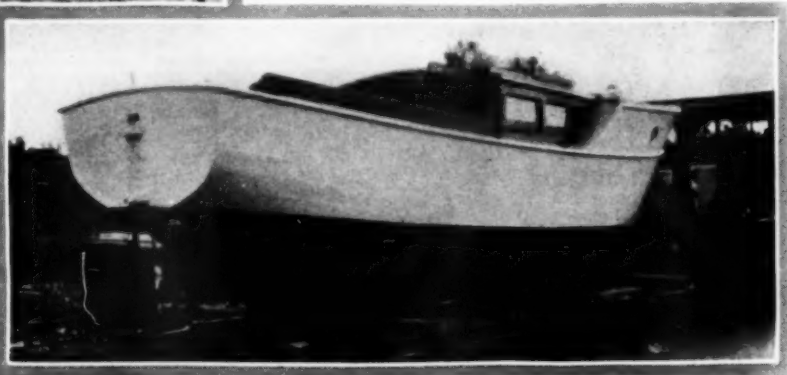
(Continued on page 68)



When under way the little hull travels steadily along at about 7½ knots

boat, but that is not the case, however. This arrangement results in a great saving of space as it allows the tanks, of 60 gallons capacity, to be installed under it and good space for storage, which is usually at a premium on small boats.

The first step was to remove all inside fittings and woodwork not necessary in remodelling, including the watertight bulkhead. The engine bed was left intact, but fore and aft bearers were added as the old ones were not far enough apart for the motor, a 20 h.p. Kermath. The stem was spliced, 26 inches



The sides of the hull forward were raised 26 inches above the original height



On the schooner bound for Manua. This passage is replete with eccentric and amusing incidents for the tourist

Copper Colored Masters of the Sea

Remarkable Ability of the Island Natives of Samoa in Handling
Themselves and Their Boats in the Ever Present Heavy Surf

By Bertram Sandham

THE natives were hopping out of their huts and running toward the beach, pointing to a speck on the horizon. It was Malota, one of the island's best boatmen who had been missing three days. When last seen off the village of Faleasao, he was waving his paddle above his head at intervals, signifying to those on the beach that he had hooked a shark, and was being towed to sea by the fighting monster. For a day and a night the shark thrashed and raced over the sea, towing in his crimson wake Malota and his frail pou-pou. The remaining time was spent in towing his prize back to the island, which he had long lost sight of. In spite of being carried along most every point of the com-

pass, and having no land in sight when his adversary gave up the battle, his native intuition, the Samoan instinct, turned his bow toward home. He had no nourishment or water in this time and as he neared the surf he cast the shark loose to be washed ashore by the waves. He raced in with the breakers, pulled his canoe up under the coco palms and was none the worse for his experience. The shark to my surprise was then cut up and rationed among the village, he receiving no larger piece than the rest, but the teeth would adorn his hut.

The Samoan Islands are oft times called the Navigator Group for the achievements of the natives in boat building,



A Malaga in Pago Pago Bay, boasting thirty oars—count them



Two of the dusky maids at Manua. The one on the right bears the name of Faalavilavi (trouble), none was experienced, however

and their fearless display of seamanship. They rightfully deserve this coined phrase, the writer having spent two years among this admirable group of islands, with considerable time spent in fishing, surf-riding and sailing with the natives. One has to visit these isles to really appreciate and enjoy the vast variety of primitive methods which are employed by these copper-colored men, from the hewing of their outriggers to the hauling in of a boatload of precious shark. The various types of boats used by these southerly inhabitants are all constructed in these islands by those that have had years of experience in this line and made in most cases with primitive tools, the chief instrument employed being the adze. This tool is equally as original as their methods and material, being no more than a piece of sharp coral, attached to a rough handle. Upon arriving at the island of Tutuila in the Navigator Group, the first view that greeted my gaze from the deck was a score of natives riding the large waves in their outriggers and surf boards, racing into the beach at express speed. The ease with which they manipulated their paddles while standing erect in their canoes, and the manner in which their boats behaved while sliding off the crest of the waves, was an object of my intense admiration.

After a few days of settling myself

on the island, I started in search of an outrigger canoe. In conversation with several of the island's white residents, I was informed that boats were difficult to purchase. They required much time and energy in the making, and the native's dislike for labor, together with the apparent little use for money, put the pou-pou market on an equal footing with the pre-war saloon in the United States today. I finally persuaded a native, after considerable deliberation, to rent me his canoe, either of us having the right to use it. This was satisfactory to me for the present, and donning my bathing suit I put forth to test my skill at surf-riding.

The phrase, "When in Rome do as the Romans do," didn't apply to Samoa, as I lay on the beach, scratched from head to foot, having been rolled along the ragged coral reef by a huge wave that I had failed to conquer, and the outrigger attachment of the canoe hung entangled about my neck. The surf riders of young years who were fortunate enough to witness my loop the loop into the beach, were laughing loud and long. The older ones were inquiring as to the extent of my injuries, and started



Views from our front porch on the island of Manua. A Vaa-aku is seen under the palms



The author surf riding in his pou-pou. Much grief on the coral reefs is the price paid for mastering this sport

repairing the broken canoe, the last parts of which were being washed ashore by the endless chain of waves. I gratefully accepted the invitation of several natives to surf ride with them in their canoes. In this way I was the recipient of much instruction, and gathered many pointers from them in the handling of the paddle which at the same time caused a rise in my barometer of hope.

After several weeks of scouting for a boat builder, I finally located one that agreed to build my canoe, providing I helped him in the felling of the tree, and the hauling of the hewn log to the coast, where the outrigger would be attached, and finishing touches put on the craft. He pointed to a peak some miles distant as the spot where suitable trees were to be found.

The next morning found us heading into the green blanketed mountains. Mua, as his name happened to be, carried a basket made from a coconut palm frond and containing a few

(Continued on page 100)

Scout, A Real Cruiser

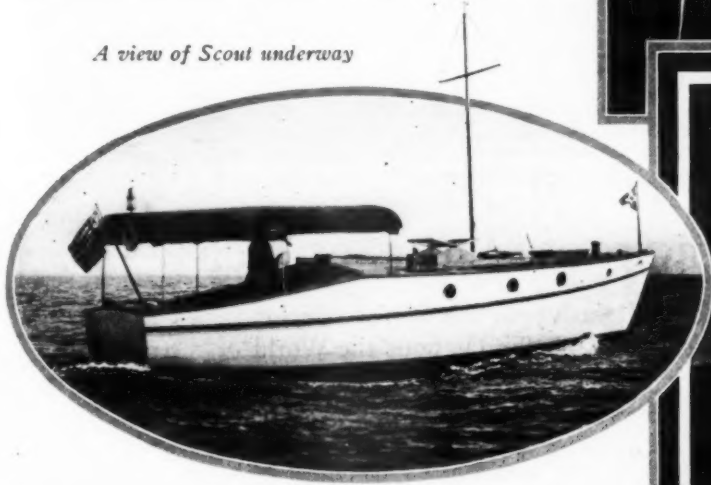
A Type of Small Boat Which Is Practical for Ocean or Inland Work

SCOUT is Ed. Stone's cruiser and she's a regular boat for every inch of her 33 feet of length. If there is anyone of our acquaintance who should know and who does know what a small cruiser should be, it is the owner of Scout. In the first place, as engineer of the Knox Motor Company of Springfield, Mass., Mr. Stone designed the four-cylinder valve-in-head Knox motor with which Scout is powered. This engine has now seen two seasons of very active service and as yet the first replacement is to be made. For fuel economy it has beaten all records. Mr. Stone has kept an accurate record of all his trips in Scout and has found that he has averaged better than seven miles to the gallon of gasoline, which with a twenty-horsepower engine in a thirty-three foot heavily-built cruiser, maintaining a speed of about nine miles an

The Captain - Owner
E. J. Stone, of
Springfield,
Mass.

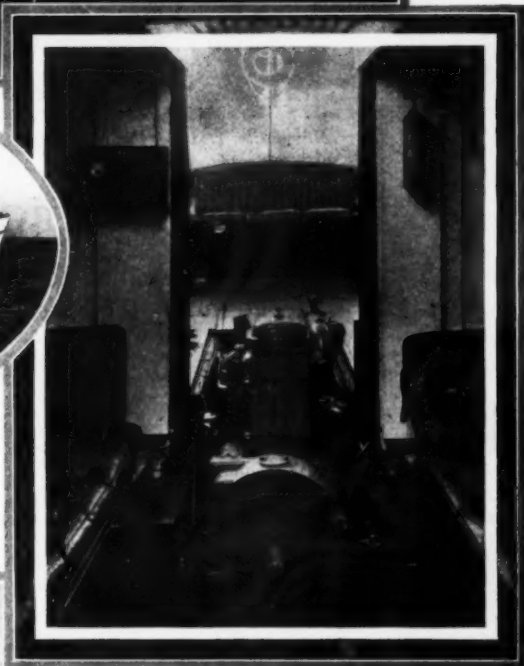


A view of Scout underway



hour, is a very fine performance record for the combination.

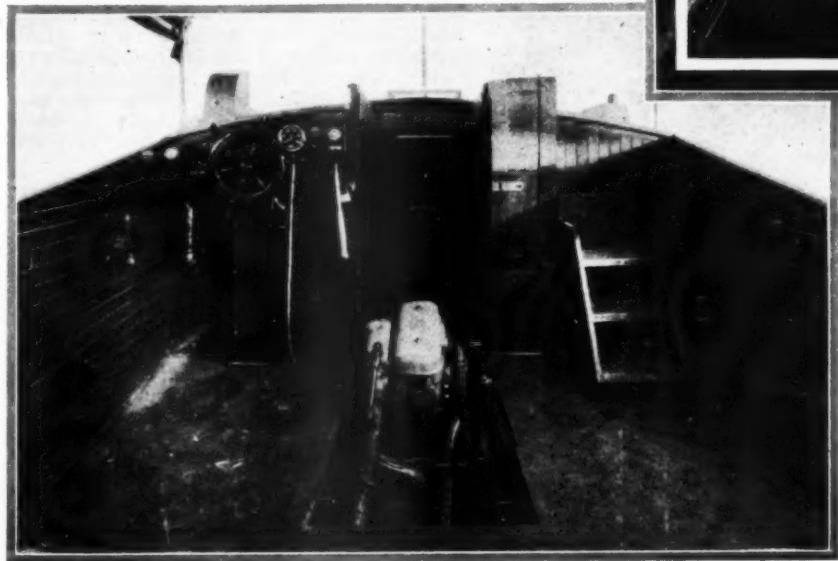
In accommodations, Scout is especially commodious, both in respect to the cabin and cockpit. She is an example of the possibilities in small cruiser design—no frills, no state-



A view from the interior of the cabin looking aft

rooms or enclosed galleys, which are impractical in real cruisers of a small size and often do much to discourage an inexperienced owner and prevent him from getting the greatest enjoyment out of his boat.

Scout is equipped with a complete radio set which operates from the storage batteries used for lighting. No difficulty is experienced in receiving concerts and other matter broadcasted from stations up to a thousand miles distant. Many small cruisers of the size of Scout are now being equipped with radio.



The cockpit is an especially large one for a 33-footer—Note the Knox valve in the head motor



Navigation class on the New York State Schoolship Newpport. Taking a time sight

Keeping Track of Time at Sea

Rotation of the Earth Relative to the Sun's Position
Determines the Passing of Time Throughout the World

By Gershom Bradford

"FOR a long time now, the circus-running sun has raced within his fiery ring." So speaks Melville in his incomparable whaling story—*Moby Dick*.

And as this great body apparently sweeps our skies it measures the duration of time and blocks off our lives into units of days; it has done it for our ancestors, will continue it for posterity throughout the ages.

The earth turning her own individual rotation causes the stationary sun to apparently move in revolution around us each 24 hours in splendid illusion. This circle of revolution contains 360° , as is usual, and if accomplished by the sun in 24 hours there is evidence of a speed of 15° each hour. So as the sun moves over 15° of arc we learn that an hour of time has passed.

The sun appears to rise to the eastward and set to the westward rising constantly during the forenoon until it reaches its highest altitude which occurs on the ship's meridian, and we call it noon, ship or local time; from then on the sun sinks lower and lower in the western sky.

It is at noon, in the real or astronomical sense, that the day changes, from July 3 to July 4, for instance. Then with the sun on the meridian July 3 noon—the ship's clock reads 12 o'clock or 0 h. Now assume the sun moves west 15° —the clock reads 1 p. m. or 1 h; 30° west 2 p. m. or 2 h, and so on through the 24 hours. When it is within 15° of the meridian next day we could say it is 11 a. m. civil or shore time, but astronomical or sea time it is 23 hours, still of the previous date by the calendar. That is, at 11 a. m. on July 4 civil time, it is July 3 23 hours astronomical time.

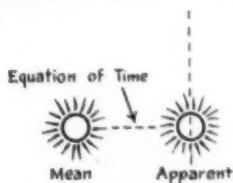
Now it can readily be seen that the sun can only be on one meridian at a time; if it is on the meridian of your ship in 60° W, making it eight bells, noon for you, then for ships on the 45th meridian West (to the eastward of you an hour in time) the sun must be westward of their meridian, 15° or one hour; hence their clocks will read 1 h or 1 p. m., while yours says noon or 12 o'clock. The vessels on the thirtieth meridian West will, by the same reasoning,

have the sun westward of their meridian 2 hours, and their clocks will read 2 p. m. Hence a fundamental fact of time is developed that the clocks' faces on ships (or places eastward of you are showing later time in the proportion of one hour for every 15° of longitude. It is well known that when it is noon in New York it is tiffin time in London.

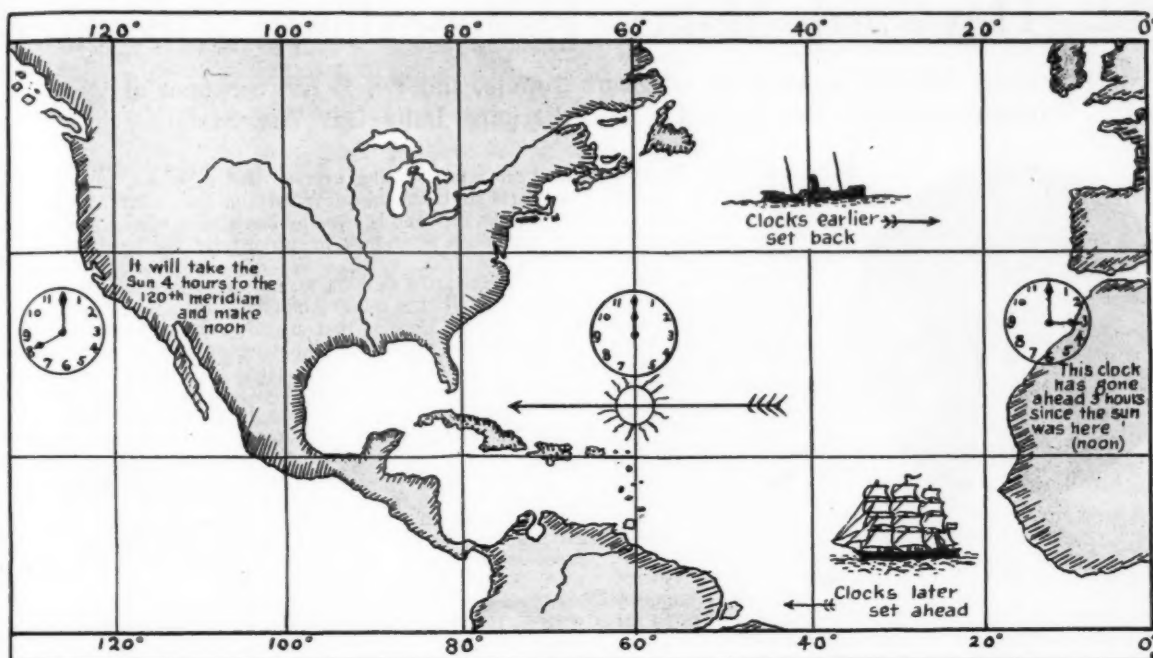
Still our ship is in 60° W, and it is noon, the sun is on the ship's meridian; but all vessels on the seventy-fifth meridian look to the sun 15° eastward of their meridian; it lacks an hour of their noon with the clocks reading 11 a. m. or 23 hours of the previous day. A vessel on the ninetieth meridian 30° to the westward has the sun 2 hours eastward or 10 a. m. (22 hours). Hence is shown the twin fact to the above that the faces of

clocks on ships (or places) to the westward show earlier time.

It is rather a striking illustration of this difference of time to consider and realize that on this ship off the American coast at noon the officers are engaged on latitude sights for position just prior to going below to dinner, while at that very instant the officers of those ships making for the Straits of Gibraltar are taking the p. m. sights for longitude, and will shortly go below for their supper; and



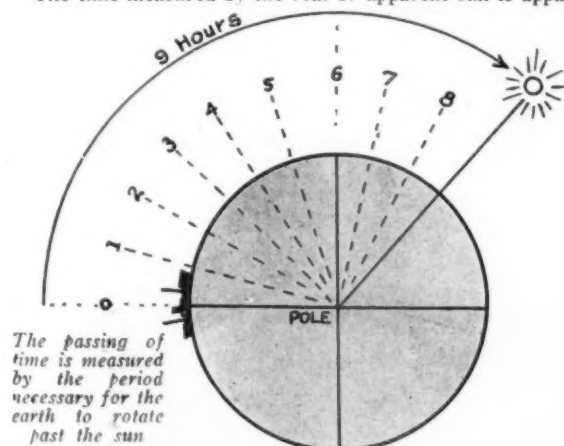
Equation of time is the relation between the mean and apparent sun



Time in various parts of the world at the same instant will differ widely

still at the same instant the officers of those ships expecting soon to make the coast of California are working their a. m. longitude sights preparatory to their breakfast. All these navigational activities with their respective and appropriate times of day are, it will be repeated, occurring at the same moment.

The time measured by the real or apparent sun is appar-



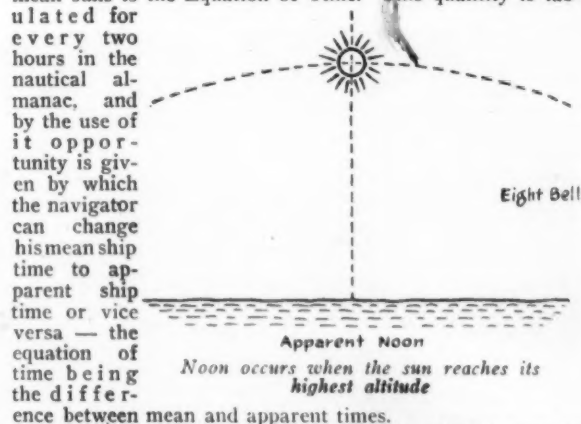
ent time. So is time derived from that trigonometrical calculation called a time sight, from which longitude is obtained; and when the sun is on the meridian it is said to be apparent noon. This would be all there was to it were it not for the unfortunate fact that the sun does not move at a uniform rate of speed. When it was said that the sun made its apparent revolution around the earth in 24 hours average periods of time were considered. But as a matter of fact in some parts of the year the days measured by the apparent sun are only 23h. 44m. in length, while at other times as much as 24h. 16m. is consumed, with constantly varying lengths everywhere in between. These facts show that the sun, or rather the earth, at times speeds up and at others slows down. The reasons for this varying movement is due to some three or four rather complex causes and conditions, perhaps unnecessary to go into in this article.

The difficulties confronting a clock-maker who set out to construct an instrument that would follow the vagaries of

the apparent sun are quite readily imagined, and the impossible, or at least impractical, is not attempted. The astronomers, with the aid of the navigator's elastic imagination, solved the problem by inventing another sun, which we must always think of as also traveling across the sky either just ahead or behind the apparent sun.

The imaginary sun is called the mean sun because it travels at a mean or average rate of speed making each day exactly 24 hours long. This is the average speed of the apparent sun. Such an assumption opens the opportunity for the clock makers to construct their time-pieces based on mean time. So it follows that the mean sun is 15° past the meridian at 1 p. m. mean ship time. The clocks and watches indicate the hours that the mean sun is past the meridian.

If it happens that the real or apparent sun is ahead, or westward, of the mean sun, then the former will come to the meridian first and the apparent noon will precede mean noon. The difference in time between the apparent and mean suns is the Equation of Time. This quantity is tabulated for every two hours in the nautical almanac, and by the use of it opportunity is given by which the navigator can change his mean ship time to apparent ship time or vice versa — the equation of time being the difference between mean and apparent times.



From what has been said earlier in this article it must be plain that every position on the seas and every place on the earth carries a different local time, excepting of course, those places on the same meridian. That is, Eastport, Boston, and New York, would each have their own time were it not for convenience that they agree to all use the
(Continued on page 112)

Col. Hayward Makes Fisher-Allison Decision

Protests Filed by Humphrey Birge of Buffalo, and Dr. G. N. Stephens of Syracuse Against Baby Gar III and Packard Baby Gar Are Sustained



Commodore Ericson of Hamilton and Toronto, who drove Nick Nack in the Fisher-Allison Race

IN the race for the Fisher-Allison Trophy which was held at Hamilton, Ontario, last summer, as many will remember, there arose a controversy as to the eligibility of the various boats which were entered, as to whether they qualified under a strict interpretation of the racing rules. Mr. Fisher, the donor of the trophy, was consulted and approved of the entries, but in spite of this, Baby Gar III, owned by Gar Wood, and Packard Baby Gar owned by Col. J. G. Vincent

were protested by Humphrey Birge, owner of Nick Nack, and Dr. G. N. Stephens owner of Miss St. Lawrence, two boats also entered in the races. The boats were protested as being equipped with power plants *not originally designed for marine service* and for *not being stock motors*. After these protests had been filed, Messrs. Wood and Vincent protested all other boats in the race, some as not being equipped with *stock motors* and others as being driven by professionals.

The local race committee at Hamilton allowed all protested boats to start, and the race was won in three straight heats by Gar Wood's craft, Baby Gar III, with Col. Vincent's boat Packard Baby Gar coming in second, subject of course, to the decision of the protests.

The Hamilton committee decided that they had no jurisdiction to decide the merits of the protests as it was a question of rule interpretation which was a matter for the American Power-Boat Association itself to decide. The Council of this body voted to give power to its president, Commodore Albert L. Judson, to appoint a referee and judge. Commodore Judson asked Col. William Hayward to act and he very kindly consented to do so. E. W. Marshall also served as technical adviser to Col. Hayward.

In many respects Col. Hayward's decision is a masterpiece which will go down into history and be used as a

guide in future racing events. He pays a great tribute to efforts of Commodore Wood and Col. Vincent toward developing fast and seaworthy boats of a wholesome type. He commends what they have done for the promotion of the sport.

Col. Hayward's opinion sets at rest for all times the question of what is a *stock motor*. In the past the manufacturers have claimed that anything should be considered as *stock* which they would build for anyone *on order*. All *special parts* and equipment, many of which have been used on Fisher boats, have been passed in the past on this basis. Col. Hayward says in this connection: "I think Mr. Fisher wanted this race contested for by boats equipped with engines that any sportsman could walk up to and look at and buy for immediate delivery, if he had the price, from a stock kept on hand for sale." *Stock*, he says, "Means an accumulative store or a reserve supply; articles the like of which are kept in stock for sale to a prospective buyer." The opinion and decision of Col. Hayward, in full, follows:

A hearing in the above matter was held at the Waldorf-Astoria Hotel on October 25th, 1922, at which all parties interested were present in person or were represented. A statement was there made by C. F. Chapman, Secretary, which, it was unanimously agreed, fully and accurately stated the facts leading up to the controversy in question. I accordingly quote Mr. Chapman's statement:

"The American Power Boat Association is custodian of a trophy, which is known as the Fisher-Allison Trophy, which was presented by Carl G. Fisher of Indianapolis. Competition for that trophy is governed by a deed of gift published in the American Power Boat Association Year Book, it being on pages 133 to 144 of the 1922 issue. In addition to the stipulation set forth in this deed of gift, competition is also governed by all rules of the American Power Boat Association for sanctioned races, all of which are published in the same rule book.

The race for this trophy was set at the last annual meeting of the American Power Boat Association, which was held in New York City last October, and the place which

(Continued on page 124)



Nick Nack, Hall Scott powered and her owner Humphrey Birge of Buffalo. This boat will probably be awarded the Fisher-Allison Trophy

Dolores, An Auxiliary Cruising Knockabout

An Inexpensive Little Seaboat, Not Too Difficult for the Skilful Amateur—Suitable for Racing or Cruising

Designed Exclusively for MoToR Boating
By Chas. D. Mower

TO meet the increasing demand for small auxiliary cruisers this design has been prepared to meet the following requirements: First, a boat small enough to be easily handled by one man or by a couple of boys; second, a small cabin for shelter in bad weather, containing berths so that two persons can sleep aboard and make short cruises; third, a permanently installed auxiliary motor; fourth, a good seaboat, safe in any weather, and lastly, a comparatively inexpensive boat that will be within the ability of an amateur builder of some experience.

The plans show a keel boat, 24 feet over all, 20 feet water line, 7 feet beam and 4 feet draft; knockabout rigged with Marconi mainsail and jib. The boat has good freeboard and a high bow that will make her dry in rough water. For simplicity of construction, she has a transom stern with the rudder hung outboard. The outside ballast makes her non-capsizable and absolute safety is assured by the water-tight cockpit and bridge deck which make it impossible for the boat to fill and sink even though she should be knocked down in a bad squall and water taken into the cockpit.

She will make an ideal boat for a man and wife fond of small boat sailing to use for week-end cruising or for two or three boys to use for longer cruises in any waters.

The boat is suitable for a one-design class as she will be fast enough to give good racing and a one-design class of small auxiliaries would be an interesting innovation that would appeal to many who want to combine racing and cruising in a small boat. The cabin is provided with two berths and a small galley forward.

For the power plant any of the smaller single and double cylinder engines will answer admirably. These will range from the Kermaths up through the Palmers and other similar types. Motors, in power up to possibly 8-10 h.p. will be ample to provide all the auxiliary power required under all conditions.

GENERAL SPECIFICATIONS

The general dimensions of this boat will be: Length overall 24 feet 0 inches, length water line 20 feet 0 inches, extreme breadth

7 feet 0 inches, extreme draft 4 feet 0 inches and ample freeboard.

Material and workmanship: In carrying out these specifications it is understood that only the best materials shall be used and the best workmen employed. All woods shall be sound, well seasoned and of a kind and quality suitable for the purpose and use intended. Any defective material or workmanship will be rejected at whatever stage of the work it may be discovered and shall be made good by the builder at his expense to the complete satisfaction of the owner.

Laying Down: The lines shall be laid down full size from the dimensions given in the table of offsets and faired up as necessary. The lines are drawn to the outside of planking and allowance for $\frac{3}{4}$ -inch plank shall be made in making the moulds. A mould shall be made for each design station, space 2 feet 0 inches as shown.

Keel: White oak, 4 inches wide and $1\frac{3}{4}$ inches thick, in one length, sprung to shape as shown. Keel batten of white oak, 6 inches wide and 1 inch thick, in one length, fastened to keel with 2-inch brass screws. To be bedded in thick white lead paint. Rabbet for planking to be cut in keel and keel batten properly bevelled to take garboards.

Stem: White oak, natural crook, sided 4 inches and moulded as shown on plans. To be fastened to keel with 5/16-inch galvanized screw bolts set up with nut and washer on inside. Stem to be rabbeted to take ends of planking.

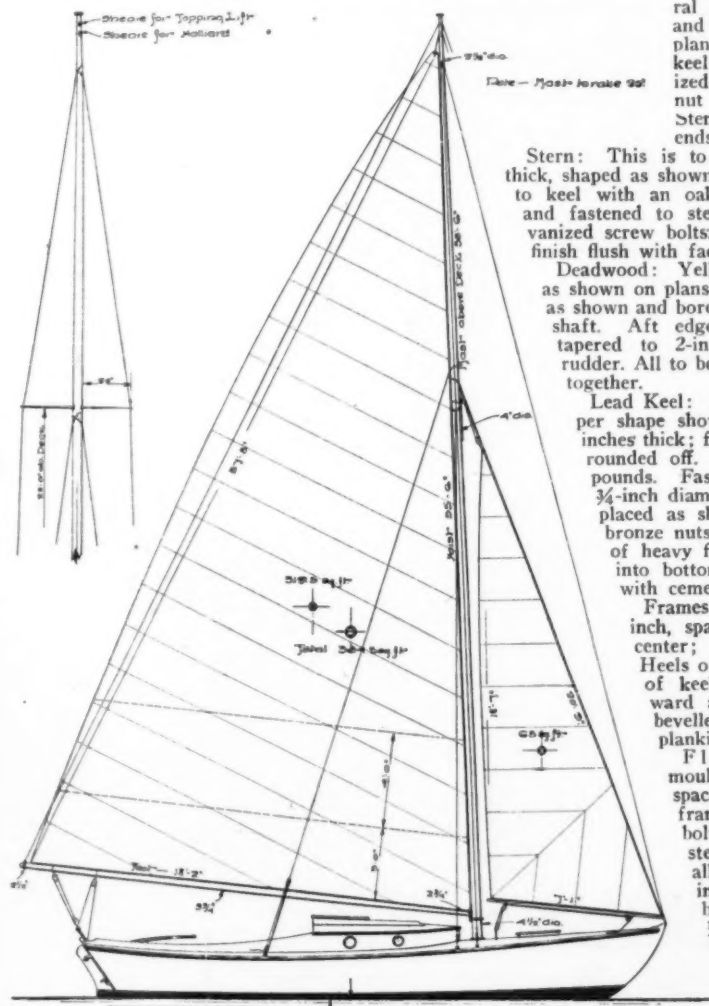
Stern: This is to be white oak, 1 inch thick, shaped as shown on lines and fastened to keel with an oak knee sided 3 inches and fastened to stern with 5/16-inch galvanized screw bolts. Ends of planking to finish flush with face of stern.

Deadwood: Yellow pine, or white oak, as shown on plans. Shaft log to be fitted as shown and bored to proper size to take shaft. Aft edge of deadwood to be tapered to 2-inch siding at heel of rudder. All to be very thoroughly bolted together.

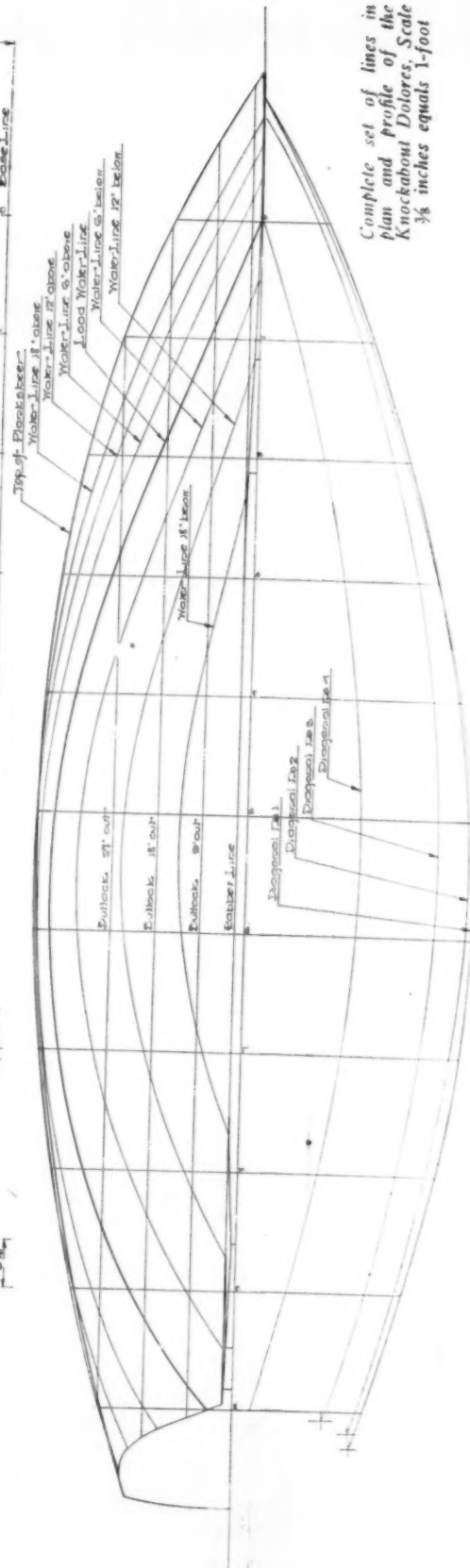
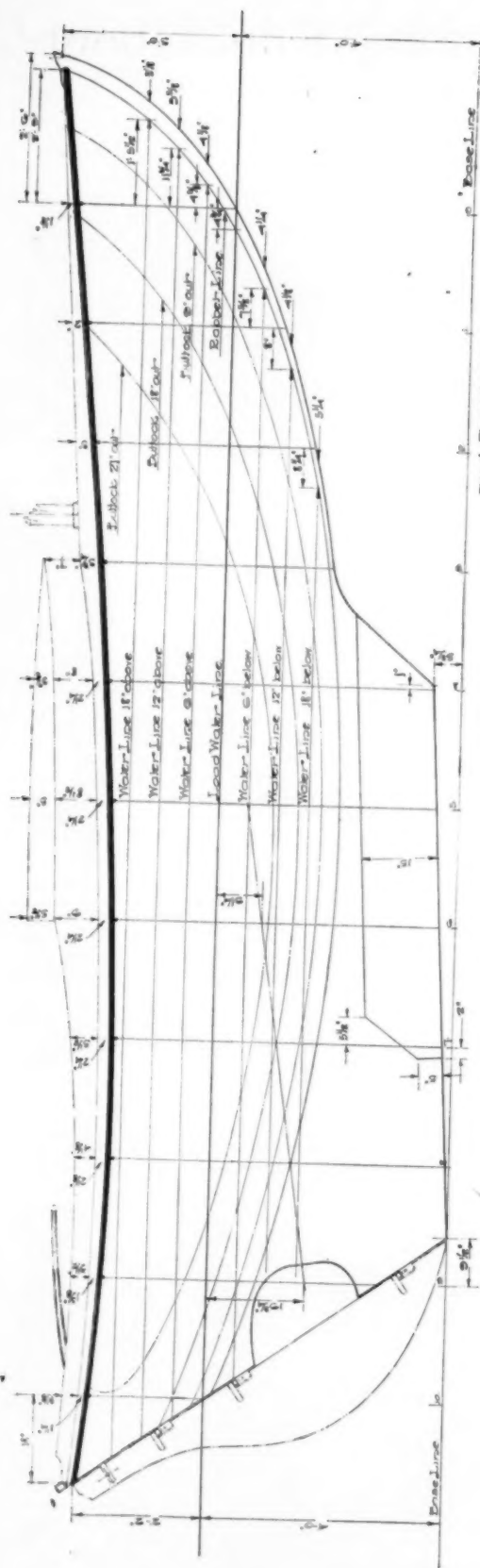
Lead Keel: Lead keel to be cast as per shape shown on drawings and 4 inches thick; forward end to be neatly rounded off. To weigh about 2,000 pounds. Fastened to hull with six $\frac{3}{4}$ -inch diameter Tobin bronze bolts, placed as shown, and set up with bronze nuts and washers on inside of heavy floors. Heads to be let into bottom of keel and covered with cement.

Frames: White oak, 1 by 1 inch, spaced 8 inches center to center; stem bent to shape. Heels of frames to land on top of keel batten. Frames forward and aft to be properly bevelled to fit inside of planking.

Floors: White oak, moulded as shown on plans, spaced one to every pair of frames. Floors taking keel bolts and those under mast step to be sided $2\frac{1}{2}$ inches, all other floors sided $1\frac{3}{4}$ inches. Floors to be bolted to frames with $\frac{1}{4}$ -inch galvanized stove bolts set up with nut and washer, at least three bolts each side. Where possible the floors shall be fastened to keel with



Outboard profile and sail plan of the Knockabout Dolores



Complete set of lines in plan and profile of the Knockabout Dolores. Scale $\frac{3}{8}$ inches equals 1-foot

through bolts set up with nut and washer. Long drift bolts to be used elsewhere.

Planking: White cedar of the best quality in long lengths and narrow strakes. To be $\frac{3}{4}$ inches thick when finished. Planks to turn of bilge to be hollowed on inside and rounded on outside to fit shape of frames. Butts to be well shifted and all must be made on an oak butt block between frames and well fastened. Plank fastenings to be copper nails riveted over burrs or $1\frac{1}{4}$ -inch No. 10 brass screws as directed by owner. All fastenings to be counter-

sunk and plugged with cedar bungs set in white lead. All planks to have at least two fastenings at each frame and all planks over 5 inches wide to have a center fastening. Seams to be caulked with cotton, paved with white lead paint and filled with white lead putty. Planking to be carefully planed, scraped and sandpapered perfectly smooth and fair to the complete satisfaction of the owner before painting.

Clamp: Yellow pine, in one length on each side, $1\frac{1}{4}$ inches thick and $4\frac{1}{2}$ inches deep. To be fitted at proper height to be flush with top of deck beams. To have two

through rivets at each frame, lower edge neatly chamfered. Bilge stringer: Yellow pine, in one length each side, $1\frac{1}{4}$ by 3 inches. Fastened to frames with $2\frac{1}{2}$ -inch brass screws, one to every frame, staggered in upper and lower edge. Stringers to be tapered to 1 by 2 inches at ends.

Deck Beams: All beams to be white oak, sawn to crown of 4 inches in 7 feet. Heavy beams at mast partners and fore hatch to be sided 2 inches; all other beams to be sided $\frac{7}{8}$ inches. All beams to be moulded $1\frac{1}{2}$ inches, spaced as per plans. Fore and aft carline for cabin and

cockpit coaming to be oak 2 by 1½ inches. Oak mast partner fitted as shown on plans. Oak breast hook fitted forward.

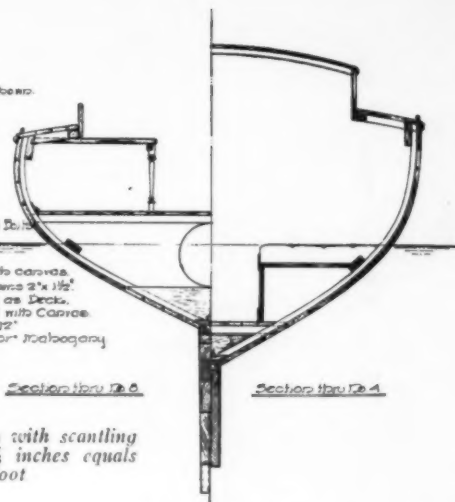
Deck: This is to be of white pine, or cedar, ¾ inches thick, in narrow planks with tongue and groove edges; fastened with galvanized nails. Covered with heavy canvas, in one piece, laid in thick paint and thoroughly stretched. Fastened with copper tacks along edge of plank sheer and covered with oak moulding as shown. Oak chock rail fitted on top of deck as shown.

Cabin Trunk: Cabin coaming to be ¾-inch oak or mahogany, as directed by owner, steam bent to curve at forward end and of height as shown. Fastened to carline with brass screws, countersunk and plugged. Set in white lead to make a tight joint at deck. House beams to be oak sawn to crown of 6 inches in width of cabin, ¾ by 1½ inches. Top of house to be ¾-inch tongue

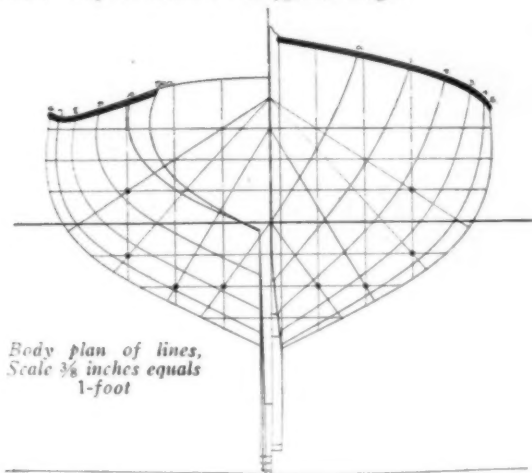
Scantlings

Sheer, White Oak, 2½" x 4", milled as shown.
Keel, White Oak, 4" x 1½"
Keel, Bottom, White Oak, 1" x 6"
Deadwood, Yellow Pine as shown
Frames, White Oak, alternate best
1" x 1", 8" centers
Hanking, 1½" cedar
Stow, Yellow Pine, 1½" x 4"
Bulge Stringer, Yellow Pine, 1½" x 5"
Floor, Oak, 1½" x 2½" (floor to ray of keel) 2½"

Decking ¾", White Pine, covered with canvas.
Deck Beams, Oak, 7½" x 1½", Heavy Beams 2" x 1½"
Cockpit flooring and beams same as Deck.
House Top, ¾" T&G White Pine covered with canvas.
House Carline, 7½" x 1½" Oak, spaced 12"
House Sides & Coaming, ¾" Oak or Mahogany



Midship section with scantling sizes, Scale, ¾ inches equals 1-foot



one piece laid in thick paint and fastened with copper tacks. Companionway slide and doors to be mahogany. Two 4-inch round port lights in each side and one in forward end, all to open.

Cockpit: Bridge deck fitted as shown on plans with hatch over motor. Cockpit floor same as main deck, covered with canvas and made water tight at sides and ends. Two lead pipe scuppers fitted at aft end. Mahogany seats fitted on each

side of cockpit as shown, with neat turned stanchions, three each side.

Rudder: To be of white oak, 1¾ inches thick at forward part and tapered as thin as possible at aft edge. Hung to stern with three pintles as shown. Tiller to be oak, about 4 feet long, fitted with bronze straps 2 by ¾ by 12 inches, riveted to tiller and fitted with ½-inch bronze bolt through rudder head.

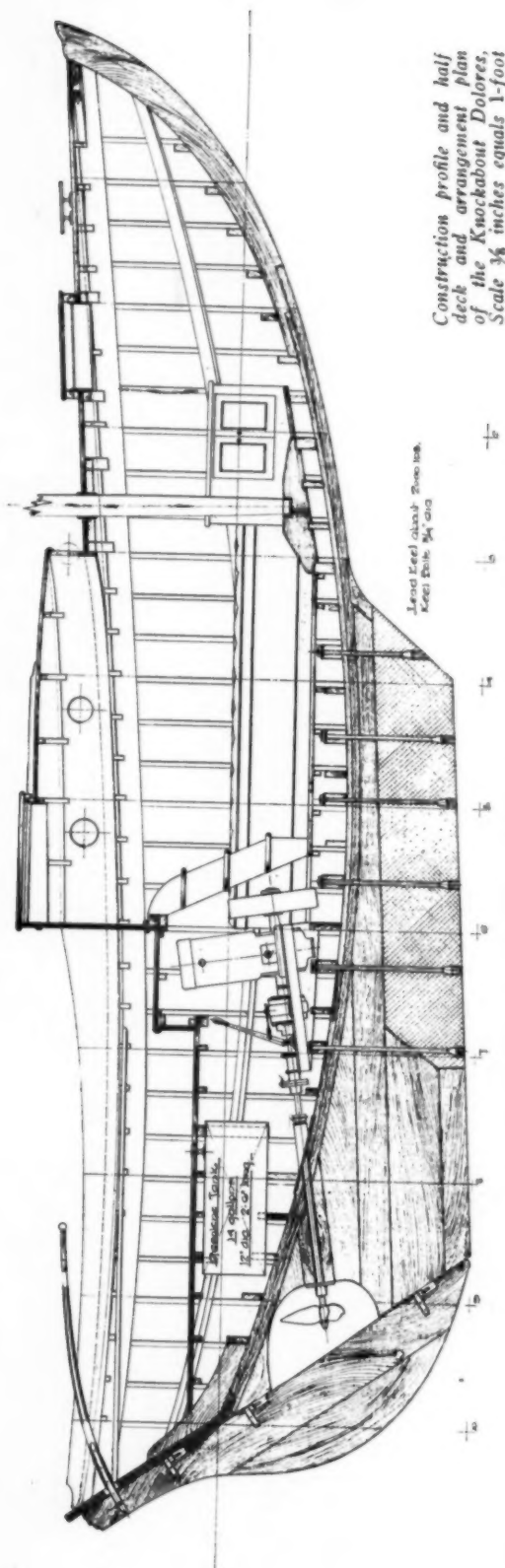
Cabin: Fitted with transom seats on each side and lockers at forward end as shown on plans. Trap doors to be fitted in tops of transom to give access to locker space under Cabin floor to be laid with hatches to give access to bilge.

Finishing: Outside of hull below water line to have at least three coats of anti-fouling marine paint of make approved by owner. Topsides to have at least four coats of yacht white of make approved by owner. Water line to be painted at height shown on sail plan, 6 inches above designed L.W.L. at bow; 3 inches at stern and 2 inches at lowest point. Decks to be painted three coats of decks paint of approved color. All bright work to have at least four coats of best spar varnish. Inside of hull to be painted three coats of lead paint of color approved by owner. All paint and bright work shall be in first-class condition when boat is delivered to owner.

Spars: To be of selected spruce, or Douglas fir, as shown on sail plan. Mast to be 41 feet 10 inches overall; 4½ inches diameter at deck, 4 inches at lower rigging and 2½ inches at upper rigging. Fitted with brass track, ¾ inches size, for hoist of sail. (Track and slides for sail may be obtained from Pigeon Hollow Spar Company, East Boston, Mass., or

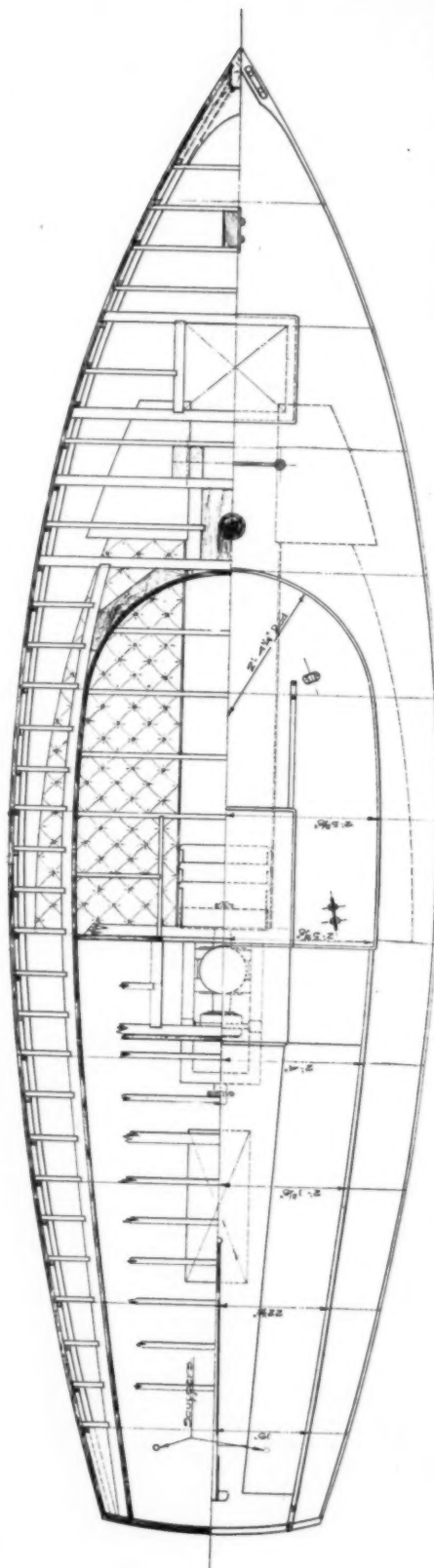
Stations	0	1	2	3	4	5	6	7	8	9	10	Trans
Top of Plank sheer	6-0-5	6-6-2	6-8-7	6-1-6	6-0-0	5-10-4	5-3-3	5-0-6	5-0-6	5-9-7	5-11-7	6-2-0
Bullock 27" out		6-6-2	4-10-1	3-10-3	3-3-7	3-1-2	3-1-5	3-4-2	3-5-0	4-4-1		
Bullock 18" out		4-10-5	3-10-1	3-2-6	2-10-1	2-8-2	2-8-6	2-11-3	3-3-7	3-10-1	4-6-2	4-8-5
Bullock 9" out	5-2-0	3-10-7	3-1-7	2-8-2	2-4-7	2-3-4	2-4-1	2-6-5	2-11-1	3-5-3	4-1-5	4-2-3
Rabbit Line	4-2-6	3-2-7	2-7-6	2-3-3	2-0-7	2-0-0	2-0-5	2-3-1	2-7-5	3-2-1		3-10-3
Bottom of Keel	4-0-0	3-1-3	2-6-5	2-2-2								
Top of Plank sheer	1-5-1	2-3-0	2-9-5	3-2-1	3-4-6	3-5-7	3-5-3	3-3-6	3-0-3	2-8-1	2-2-2	1-9-0
Water Line 18" ab	0-11-1	1-10-1	2-6-5	3-0-7	3-4-4	3-6-1	3-5-7	3-4-1	3-1-2	2-8-7	2-2-5	1-10-2
Water Line 12" ab	0-7-7	1-6-6	2-4-1	2-11-1	3-3-7	3-6-1	3-6-2	3-4-3	3-1-3	2-8-2	2-0-1	1-8-5
Water Line 6" ab	0-4-0	1-2-1	2-0-3	2-8-4	3-2-1	3-5-2	3-5-5	3-3-4	2-11-4	2-4-5	1-5-4	1-2-6
Load Water Line	0-0-1	0-3-7	1-7-5	2-4-3	2-10-7	3-2-5	3-3-0	3-0-5	2-7-0	1-9-1	0-4-7	0-4-7
Water Line 6" bel		0-4-6	1-1-4	1-10-3	2-5-4	2-3-4	2-3-5	2-5-7	1-7-1	0-3-6		
Water Line 12" bel			0-6-7	1-2-3	1-9-0	2-0-7	2-0-4	1-7-3	0-10-5			
Water Line 18" bel				0-5-5	0-10-7	1-1-4	1-0-5	0-7-5				
Rabbit Line	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0
Bottom of Keel	0-0-1	0-0-5	0-1-3	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-1-5	0-1-2		
Diagonal No. 1	1-0-6	1-10-3	2-6-3	3-1-2	3-6-3	3-9-2	3-3-6	3-7-6	3-3-6	2-9-5	2-2-0	1-11-5
Diagonal No. 2	1-1-5	1-11-1	2-7-0	3-1-3	3-6-0	3-8-4	3-6-2	3-5-6	3-1-3	2-8-0	2-0-6	1-11-3
Diagonal No. 3	0-11-2	1-8-3	2-3-4	2-9-1	3-0-6	3-2-3	3-2-1	2-11-5	2-7-5	2-2-0	1-6-6	1-6-0
Diagonal No. 4	0-0-3	0-7-5	1-1-5	1-6-1	1-9-3	1-10-5	1-10-1	1-7-7	1-3-7	0-10-1	0-3-5	0-3-5

Complete table of offsets containing all dimensions necessary for laying out the 20-foot water-line Knock about Dolores



Construction profile and half deck and arrangement plan of the Knockabout Dolores, Scale $\frac{3}{8}$ inches equals 1-foot

Lead keel about 200 lbs.
Keel ribs $\frac{3}{4}$ dia.



from Henry B. Nevins, Inc., City Island, N. Y.) Two sheaves fitted in mast head, one above the other, for main halyard and topping lift. Spreaders to be fitted at height shown on plan; to be 24 inches long and made to swing forward only. Small oak cleats fitted to support eyes of rigging. Boom to be 18 feet 6 inches long $3\frac{3}{4}$ inches diameter at middle, $2\frac{3}{4}$ inches at inboard end and $2\frac{1}{2}$ inches at outboard end. Fitted with brass track for foot of sail, same size as on mast. Neat galvanized or brass gooseneck as approved by owner. Boom for jib to be 7

feet 4 inches, $1\frac{1}{2}$ inches diameter at middle and 1 inch at ends. All spars to be thoroughly sandpapered and finished with at least three coats of best spar varnish.

Rigging: All standing rigging to be galvanized wire rope with splices properly made and neatly served. Jib stay and lower side shrouds to be $\frac{3}{4}$ inches circumference galvanized wire rope. Upper side stays, upper head stay and back stays to be $\frac{3}{8}$ inches circumference wire rope. Turnbuckles to be bronze, Merriman Brothers make, $7/16$ inches size for side stays and jib stay and $\frac{3}{8}$ inches for upper head

stay. Blocks to be Merriman Brothers bronze yacht blocks; No. 1 size for jib halyard and jib sheet and No. 3 size for main sheet. No. 2 size for runner tackles. All blocks to be fitted with front shackles and becket where required. All running rigging to be best three strand yacht manila of the following sizes: main halyard and main sheet, $7/16$ inches diameter; jib halyard, jib sheet, runner purchases and topping lift, $\frac{3}{8}$ inches diameter. Halyards to lead through blocks on mast fitted with Merriman Brothers, Fig. 160 mast bracket, through fairlead to cleat on aft end of cabin trunk.

(Continued on page 108)

SMALL MOTOR BOATS

Their Care, Construction, and Equipment

A Monthly Prize Contest Conducted by Motor Boatmen

Questions Submitted for the May Prize Contests

1. Give drawings, showing the construction of a neat and simple boarding ladder, which the boatman could build.
(Submitted by C. A. R., Roselle Park, N. J.)

2. Describe the installation of an electric lighting system suitable for a small cruiser, generator to be driven directly from the engine.
(Submitted by J. L., Wissinoming, Pa.)

Rules for the Prize Contest

ANSWERS to the above questions for the May issue, addressed to the editor of MoToR Boating, 119 West 40th St., New York, must be (a) in our hands on or before March 26, (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses.

The name will be withheld and initials used.
QUESTIONS for the next contest must reach us on or before March 26. The editor reserves the right to make such changes and suggestions in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions above, any article or articles sold by an advertiser advertising in the current issue of MoToR Boating of which the advertised price does not exceed \$25, or a credit of \$25 on any article which sells for more

than that amount. There are two prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer both.

For answers we print that do not win a prize we pay space rates.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of MoToR Boating of which the advertised price does not exceed \$5, or a credit of \$5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.

Building A Folding Table Is Simple

Some Boards, Some Brass, a Little Pipe and a Bit of Effort
With a Share of Patience Will Produce a Serviceable Table

Answers to the Following Question Published in the January Issue

"Describe a table for use in cockpit of small cruiser or an open boat, made to fold or dissemble and stow in small space"

Simple and Compact Table

(The Prize-Winning Answer)

THE table shown in the drawing below is designed to stow away in a small space and eliminate all levers, braces, and other trappings which may be bent or broken in handling or stowing. The table proper is made in three pieces of $\frac{3}{8}$ -inch thick mahogany—mahogany being selected because it is little affected by warping or shrinking action of the weather and also for beauty of finish; but white pine may be used with good results where expense is a consideration.

A quarter inch wide nosing of the same material as the table, projects $\frac{3}{8}$ -inches high all around the edge to prevent dishes sliding off.

The hinges are made as shown in the detailed drawing of $\frac{3}{8}$ -inch hard sheet brass and are riveted together with a brass rivet, to an easy working fit. They are attached to the leaves of the table with No. 10 flat head brass wood screws $1\frac{1}{2}$ inches long. Filler pieces of wood or brass $\frac{1}{8}$ inches thick are placed under one side of each hinge to compensate for the offset in the hinge.

No braces are required to hold the leaves in a horizontal position—the butting together of the joints as the table is opened out provides for this and the table is rigid enough to hold the average meal-time loading, in fact more rigid than many tables on the market.

The pedestal is a piece of $1\frac{1}{2}$ -inch brass pipe threaded top and bottom, which screws into a floor flange securely fastened to the under side of the center of the table as indicated in the drawing. The other end of the pedestal screws into a brass deck plate set flush in the cabin or cockpit floor. This plate is a stock article and comes provided with a flush plug to be inserted when table is not in use.

In setting up the table the pedestal is first screwed by hand into the floor plate from which the plug has been removed. The table is

then screwed on to the pedestal and opened out as shown.

From the drawing, showing the table folded, it will be seen how compactly the table can be stowed away—only two pieces compose the outfit.

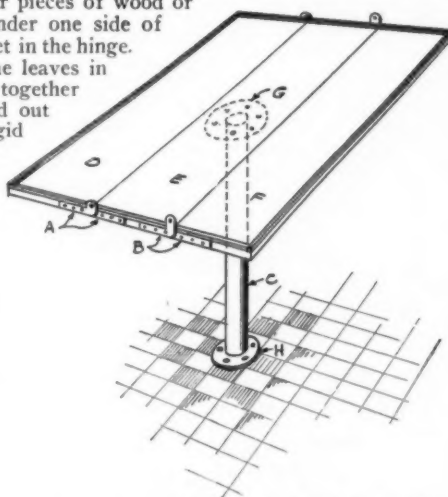
The table described is 27-inches wide (three leaves 9-inches wide each) and 4-feet 0-inches long and stands 30-inches high. These sizes may be varied to suit individual conditions, but the above dimensions make a convenient size for the average cruiser or open boat.

F. C., Philadelphia, Pa.

Folding Cockpit Table

THE sketch shows a folding table of about the simplest possible construction, suitable for the cockpit of a small cruiser or an open boat. There are no small loose parts; the wing nuts on the bolts remain in place and the cleats are provided with slots to slide over the bolts. The four galvanized pipe legs unscrew and fit inside the folded top and cleats. A table three by four feet, with two by four cleats, is shown, but for a small boat these dimensions could be considerably reduced; the builder should so plan the dimensions that the folded table will fit into some unoccupied place in the boat, under the floor of the cockpit, under a transom or in a locker.

Four boards about three-quarters of an inch thick, hinged on the lower side so that they will fold in the form of a square (or if the boards are of two widths a rectangle will form which might be more convenient for stowing). The lower cleats are bolted through one corner, by means of light carriage bolts, as shown. Space the bolts so that both cleats will fold along the board without interference. The opposite corners are slotted and those bolts are provided with wing nuts for quick assembly. Upset the ends of these



A compact folding and detachable table which F. C. has designed

bolts to prevent the nuts from coming off and being lost. In each corner of the cleats force in a pipe coupling flush with the bottom surface, but before doing this put a rivet through to prevent the end of the cleat from splitting. Into these couplings the table legs, made of three-eighths or half inch galvanized pipe, will screw. Set hardwood or rubber plugs into the lower ends of the legs so that the pipe will not mar the cockpit floor or deck. When dissembled, the legs set into a set of pipe straps screwed under one of the top boards. Oak or other hardwood is preferable for the cleats but any wood may be used for the top and the finish painted or bright as preferred.

H. H. P., Oakland, Calif.

A Sturdy Folding Table

THE first qualification of a table for a small boat is that it shall be sea-going, and by that I do not mean that it must stand up on its hind legs in a storm, for at such times no one is interested in eating from a table. What I do mean is that in the ordinary course of events it must be strong enough to take a little throwing around, a little stepping upon when it is collapsed on the deck, and an occasional bath in salt water. Such a table must be made of unveneered wood without glued joints and with legs braced in pairs and folding from the ends inward. Folding legs are preferable to detachable ones, as they are less trouble to set up. The table should be of a size that will give comfortable knee room in the cockpit and in the cabin as well, and long and narrow rather than square.

Fortunately, all of these qualifications can be answered in ready-built tables, and the only other consideration is that the article shall be easily stowed. My own boat was equipped with a table of this sort when I bought it, but for a time I failed to appreciate its advantages. With the congenital laziness which afflicts some boat owners I didn't take the trouble to find a place to stow the con-

traption, and so it was always under foot, proving its seaworthiness, but having to be moved a dozen times a day.

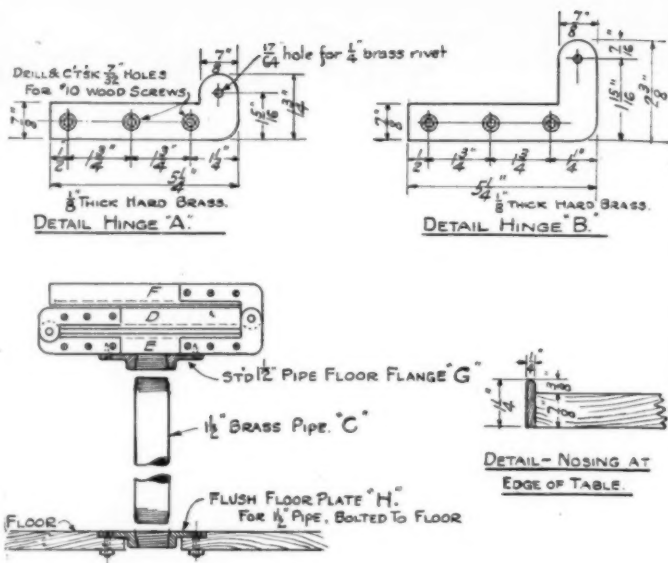
At length, however, my inventive powers came into play and I hit upon the expedient of attaching hooks to one edge of the table and eyes to the front of one of the bunks. A genius would have hit upon this device instantly, but I am one of those whose inventions are the backward children of necessity and take time to amount to anything. Thereafter the table was stood on its side when folded and had to be moved only when I looked for lost things in my locker under the bunk.

Months passed, and one day when the table was being laboriously transferred from the deck to its haven in the cabin it slipped from my hands and dropped edgewise into the cockpit. To my surprise its length exactly fitted the width of the forward end of the well, while its width was the precise height of the well, and I found that by a little manipulation it could be made to stay there, undisturbed by rolling or tossing, and entirely out of harm's and trouble's way. Thus by accident was the ideal place found for the ideal table. The greatest discoveries of science are made in just this fashion.

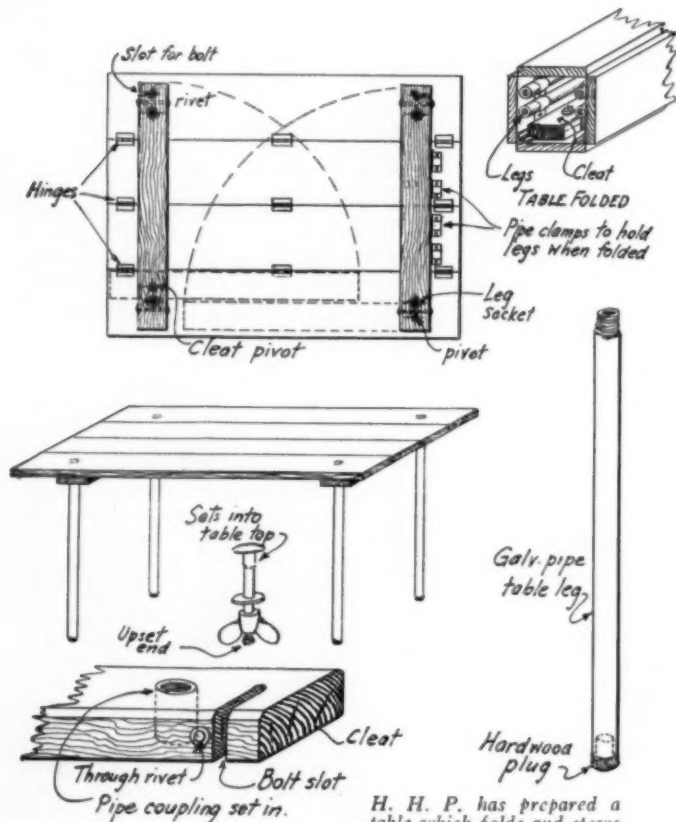
Extra coats of varnish were slapped on for protection against the weather, and now the table is stowed below only when it is possible that someone might covet it during my absence. Although humble in appearance, it is indefinitely superior to the square spindly affair which has legs that fold individually (and simultaneously when accidental weight is brought to bear), and which gives extra room at meals only to be an unmitigated nuisance at all other times.

Perhaps I have attached too much importance to the intrinsic value of this table, because, now that I think of it, it has a place in my affections like that of a member of the family. It has figured in alarms by night, when some heavy-footed member of the crew, rushing up to put more scope on the anchor cable, has crashed with it to the deck. And it has been the focal point of many a remembered chinfest. But most of all it has figured as a guide to the seaworthiness of my guests. Lying in a rough anchorage we have spread the festive frankfurters upon its groaning surface, and if they have remained on the plates we have called the motion easy. And if, under these circumstances, the guests have shown no inclination to eat, we have called them soft. Only when food goes flying to the deck and the guests go scrambling after it do we consider them members of the hard-boiled Corinthian set.

F. L., N. Y. C.



Structural details of members of the folding table designed by F. C.



H. H. P. has prepared a table which folds and stores well

Reconditioning and Overhauling Your Engine

Why and When the Engine Should Be Overhauled—
What to Do and the Proper Procedure to Follow

Answers to the Following Question Published in the January Issue

Describe and illustrate with sketches steps necessary in overhauling the motor boat engine, to bring it back to proper condition

Steps in Overhauling an Engine

(The Prize-Winning Answer)

TO clearly describe and illustrate the work involved in overhauling and reconditioning a motor-boat engine, it would be well to limit the details to one particular engine or type of engine. But the amateur mechanic or novice engine repair man who has the temerity to tear down his engine, probably knows how to use the tools required, and to execute the operations involved in separating and assembling the engine parts. So for him to overhaul an engine, to know if, why and when his engine should be overhauled, before he learns how the work is to be done, it is important to know what happens to an internal-combustion engine in operation. Knowing this, it will be easier for him to determine just what must be done, and to learn how, in the case of his own particular engine.

The combustion of the fuel charge in the cylinder produces: (1) Heat, which sometimes injures the valves; anneals the piston-rings, reducing their tension; breaks down the lubricating oil in the combustion chamber; forms carbon under the piston-crown, especially in cast-iron pistons; breaks down the dielectric strength, or resistance of the spark-plug insulation, especially if it is porcelain. (2) Carbon, which lines the combustion chamber, retaining heat and causing knocking; fouling of spark-plugs; corroding of valves and pitting of valve seats; sticking of piston-rings; and soiling of the crankcase oil, destroying its lubricating qualities. (3) Pressure, which loads the piston-pins and connecting rod and main bearings; causes a side thrust on the cylinder walls which wears them oval, and causes wear on the rings and also of the pistons. (4) Moisture, which is one of the products of combustion, and which corrodes the exhaust valve stems, and rusts the exhaust system. The other major destructive forces in an engine may be summed up as follows: Unbalance in the flywheel and crankshaft, which pounds out the bearings and causes the engine to vibrate, tending to loosen it and shorten its life; the arcing between the breaker or vibrator points, which corrode and pit the points; the normal wear of the bearings and gears or chain in the camshaft, pump and accessory drives.

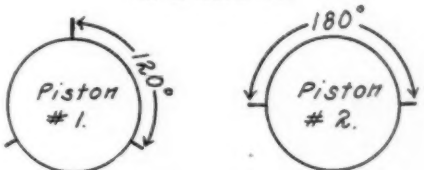
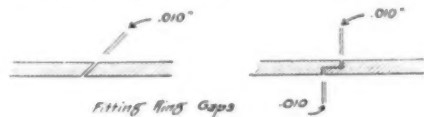
A thorough inspection of the engine after it has been taken down should include every part mentioned above, together with the electric wiring, terminals and switches.

It is advisable to place the engine in a convenient, well-lighted place before dismantling it. Some engines may be overhauled in their boats, but this procedure is not recommended. The parts should be cleaned well as they are removed, and placed in boxes for safe-keeping, as many marine engine parts are hard to get. Carbon can be removed more readily if first loosened with kerosene. The crankcase should be drained and cleaned, and any screens or sieves in the oiling system should be cleaned with care. Parts excessively worn or broken should be listed for purchase before the assembling is begun. This is important in avoiding delays, if replacement parts are not at hand. An oil can filled with turpentine is useful in loosening rusted or frozen parts, and in removing nuts and studs.

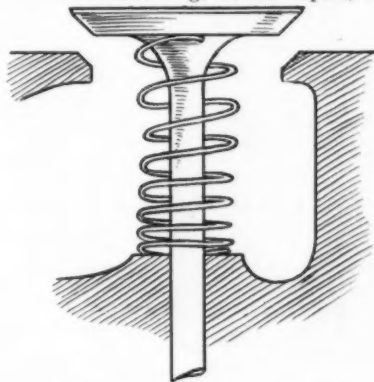
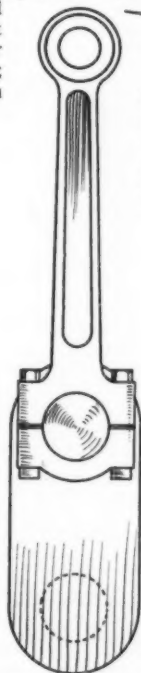
In rebuilding the engine, the crankshaft bearings should be scraped and tightened so that the flywheel may be turned over without much effort. Fit one bearing at a time, and try the wheel. Then the connecting rods should be scraped and tightened, just so snugly that the rod will just fall over of its own weight, if it is started from the vertical when made up on the crankpin. Better too loose than too tight, is a good idea to apply to marine bearings. And, as in aero engines, the bearings are of great importance.

The piston-pins should fit in the bushings without much play, say not over .003 inch. To press in new bushings and ream them is not a job for the inexperienced, so we will recommend taking the pistons to a shop for that work. Piston rings should show even wear all around, indicated by a bright ring. If the ring is dark in places, or has broken ends, a replacement is needed. Rings should be fitted so that they slide easily around the ring-grooves in the piston, and should be given the proper end-clearance.

Put the ring in the cylinder and see that the gap between the ends is between .008 and .015 inches, depending on the size of the ring. Slip a piston in the cylinder first, letting the ring rest on it while examining the gap, keeping the ring exactly square in the cylinder. The rings should be fitted to the cylinders in which they belong. Space the gaps in a piston with three rings at 120° apart, or



Ring gaps spaced for three and four ringed pistons. In #2, the first and third, and the second and fourth ring gaps are together



Some of the points brought out by E. L. S. in his prize winning article

180° in case of four rings, alternating the gaps, see sketch.

The valves should be ground only after refacing the valve-seats and the valves themselves, removing any shoulder which may be worn in either, or any pitting or corrosion. After grinding the valves, adjust the clearance between the valve-stem and the push-rods or tappets. This clearance should be great enough to allow the valves to seat when the engine is hot, and is usually greater for exhaust valves than for intakes. When in doubt as to the correct clearance, give them .030 inch or more, and after heating the engine to its running temperature, bring the clearance down to a few thousandths of an inch while the valves are still hot. Any burned or scaled valves should be replaced. The wear on tappets or push-rods is generally negligible.

The wiring of the engine should be gone over for defects, breaks in the insulation, etc., and loose terminals. The ignition system should be cleaned and adjusted preferably by an expert. It is assumed that the timing gears are so marked and assembled that the engine will be timed correctly.

The carburetor float-chamber should be cleaned and the valve and float mechanism inspected. If the float is metal, shake it to see if it contains gasoline. If so, the hole in it can be found by immersing in hot water, and observing where the bubbles come out. If the float is cork, dry it well and coat it with thin shellac.

If the engine has a demountable cylinder-head, the gasket should be cleaned carefully, and replaced with shellac. If it is at all damaged, a new one should be used. All the manifold gaskets should be replaced with shellac, and hose for water piping can be made up with grease.

If the engine is overhauled during the winter and not used immediately, fill the crankcase with oil, and pour some oil on the piston heads. Then turn the flywheel over a few times to spread the oil. Before putting in the spark plugs, clean them and adjust the gaps, and examine the porcelains for breaks.

Run the engine with a little more oil than usual, at first, as the tightened bearings and new rings will generate more heat during the first few hours of running, and the excess of oil will help to cool the engine internally. Let the engine run with the boat tied up to the dock for a few hours, to loosen it up and to make sure that everything is in good order. It is well to change the oil after about twenty-five hours of running, as in the case of a new engine.

E. L. S., Philadelphia, Pa.

Putting the Engine in Good Condition

PUTTING a motor in good condition requires a thorough overhauling and cleaning. If possible without too much inconvenience remove the motor to a warm, well-lighted room where you can work in comfort. The work can be done through the winter, preferably early in the season, so that any new parts necessary will not hold up the work at the last minute. In this way you will feel that there is plenty of time to do a thorough job, which

will not be apt to be the case in the spring overhauling rush.

Before dismantling the motor make a rough wooden frame to hold it upright. Look things over carefully, get a note book in which to jot down anything you particularly wish to remember and get several cans or boxes in which to put small parts and their fastenings. You will also need several shipping tags to tag similar parts which might get mixed. Get out your tools, socket and end wrenches are best, as they will not mar nuts. Lose the Stillson wrench unless there is pipe to take apart.

Whether overhauling a single cylinder two-cycle engine, or a four-cycle machine, the operations are practically the same per cylinder. First remove all outside small parts and accessories. The terminals of all wires should be tagged so that they may be readily replaced in their proper position. It is advisable to either tag or center punch all parts about which there can be any doubt as to where and how they are attached. Remove the intake and exhaust manifolds and detach the carburetor for cleaning. Take out the valve chamber caps, release the springs and remove the valves, being sure that the position of each valve and cap is marked. Remove the water pump and piping, and any other attachments, which will interfere with the removal of the cylinder. If it is necessary to disconnect the magneto, the coupling should be marked and a note made of the position of the distributor head in relation to the firing position of number one cylinder.

With solid head cylinders lift off the cylinders while the pistons are connected to the crankshaft. With removable heads it is generally not necessary to remove the cylinders. The position of the piston and connecting rod assembly is generally marked at the factory on the side toward the camshaft. If not marked prick punch numbers on the rod big ends. Never change pistons in a cylinder or turn them the other way. Keep the caps and bearings with their rods so marked that they will be assembled in their original position.

Timing gears if removed should be spotted and notes made to insure proper replacement. If silent chain drive is used drive a pine block between the gears before loosening the chain and do not turn the motor until chain is replaced and adjusted. Install an offset link or replace chain according to amount of wear.

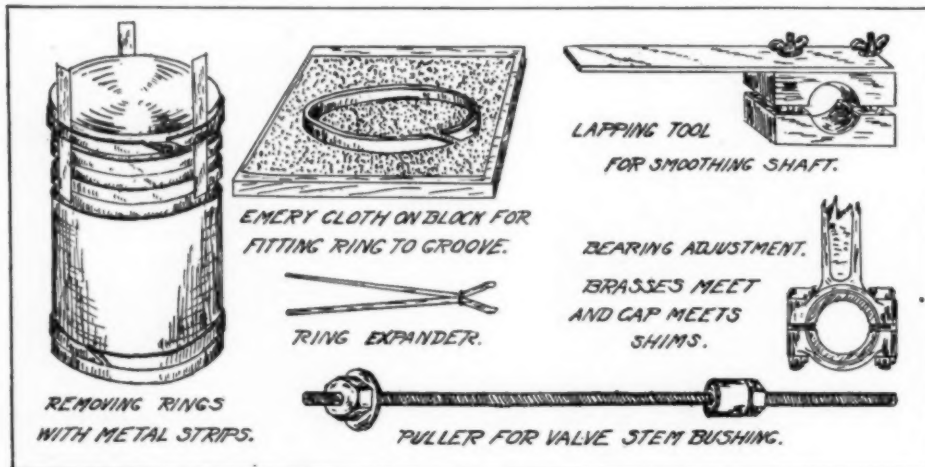
The ring may now be removed from one piston at a time, either keeping them in order or tagging, as rings should go back into the grooves from which they came. Clean the piston and ring grooves of carbon and scrape out the combustion chamber. A good plan is to test the ring for tension as it is removed, clean and place in order in the cylinder and test for wear. Should the clearance at the joint be noticeably wide or the ring show black spots on its face, new rings should be fitted.

The proper method of removing and replacing rings is to place three or four strips of thin steel or tin under them and slide the rings over the strips. If many rings are found slack and leaking it is best to install all new rings.

In fitting piston rings, first fit them to the grooves so that they will roll around the outside without binding and then fit them to the cylinders. A clearance of .001 to .0005 for each inch of piston diameter is considered good practice. If you wish to do an exceptionally good job, fit the rings so that the piston will just enter and lap in the rings with fine valve grinding compound.

While the pistons are out test the piston pin bearings by placing the rod in a vise

(Cont. on page 70)



W. B. M. illustrates some useful kinks for that engine job



Typical Chinese coastwise junk in the harbor of Shanghai

Potential Market for Marine Engines in China

In a District With Numerous Waterways and Teeming With a Crowded Population There is Room for Many American Marine Products

By W. H. Rastall

Chief Industrial Machinery Division

VICE-CONSUL ERNEST B. PRICE advises that there is apparently a good potential market for American marine motors in the district of Canton, China.

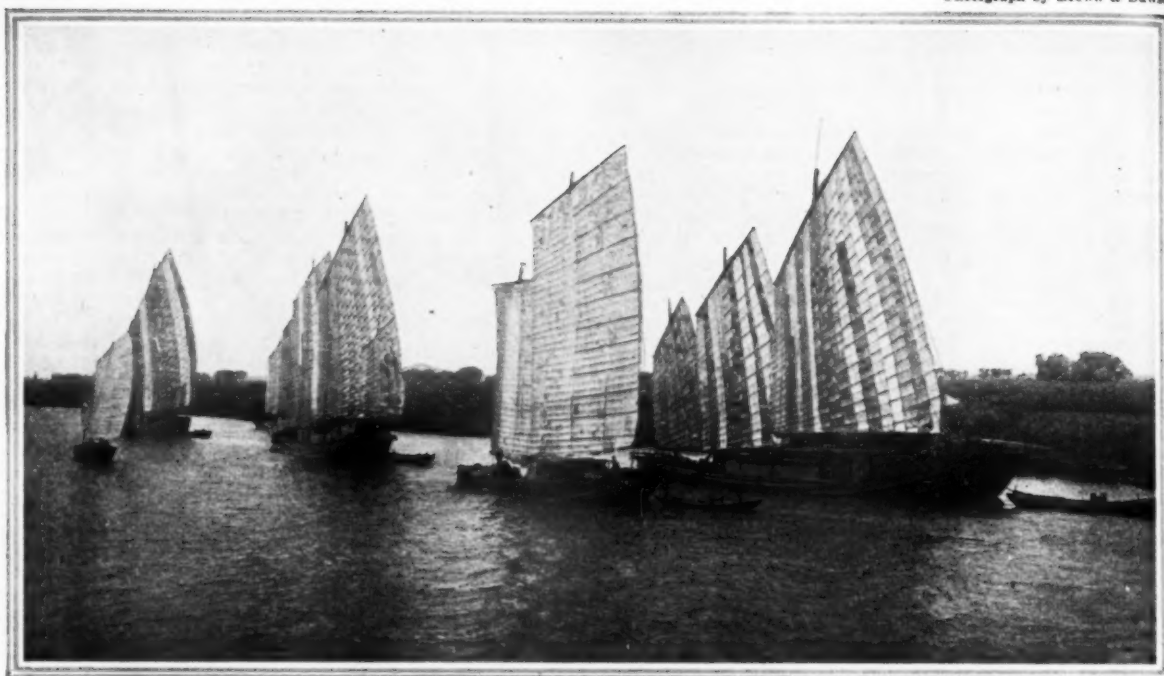
To illustrate the situation, a brief preliminary survey of the transportation conditions in South China should be given. If a circle were drawn with a radius of twenty-five miles and with its center a point about that distance down the Chu Kong or Pearl River from Canton, it would comprise a land and water area of about 1,900 square miles and a population which conservative estimates would put at not less than 10,000,000 people, or approximately 5,200 persons per square mile of total surface. This region, known in South China as the Canton Delta, is not only one of the most densely populated areas on the globe but comprises at the same time one of the finest networks of natural waterways to be found anywhere thereon. The circumference of the circle so drawn



Numerous are the boats waiting for a small engine

would include or touch at least ten cities each with a population of 75,000 or over. Within that area in a good year is grown nearly half the rice which it takes to feed the 30,000,000 people of the Province of Kwangtung. Within it were cultivated or manufactured and from it were exported abroad or to other China ports in 1920 over U. S. \$39,000,000 worth of raw silk and silk waste, \$12,000,000 of silk piece goods, \$2,000,000 of matting and mats, \$2,180,000 of firecrackers, \$1,531,000 of cotton piece goods, and enough other products to bring Canton's total export up to U. S. \$82,414,936 worth. Of this total export fully 95 per cent. was produced in the Canton Delta. Of the \$39,477,156 worth of foreign goods and \$51,309,516 worth of Chinese goods imported into Canton in 1920, it is safe to say that 50 per cent. was consumed in the Delta.

This populous and prosperous region of 1,900 square miles has less than 200 miles of railways



Salt junks on the Yangtze Kiang River

The explanation for this lies in the fact already noted that the Delta district comprises one of the finest networks of natural waterways in the world. Within the district the waters of the East, North and West Rivers of South China mingle with that of the sea in a maze of tidal estuaries. It is impossible to obtain statistics as to the length or surface area of this water system, but it is sufficient to state that every city or town in the Delta is located on one or more of these connecting waterways. It would be possible for any person resident within the Delta to reach Canton within from five to ten hours by motor launch or in twice that by native boat. It is obvious that under these circumstances the vast bulk of merchandise moved in the Delta is transported very largely by water.

As the purpose of this report is primarily to indicate a possible market in Canton for marine motors, no attention will be paid to the tonnage of ocean-going vessels entering and clearing at Canton, but the following statistics taken from the reports of the Canton Maritime Customs as to the entrances and clearances of non-ocean-going vessels at the port are of interest in this connection:

Vessels entered and cleared at Canton in 1920 under general regulations (i. e., vessels capable of plying to Hong Kong and Macao as well as inland ports but not ocean-going):

	Number	Tonnage
River steamers.....	3,534	2,264,594
Lighters	473	77,755
Launches	2,112	40,861

Vessels entered and cleared inland steam navigation rules (i. e., registered for Chinese inland waters navigation only, and including both steam and motor-driven craft):

	Number	Tonnage
All classes	54,235	836,140
Total entries and clearances	60,354	3,219,350

In addition to the above the Customs records show 8,293 native cargo boats,

not power-driven, which entered and cleared at the port in 1920. Of the total of 1,719 vessels registered in all China under Inland Steam Navigation Rules in 1920,—in which class are included motor-driven craft,—542 were registered in Canton. Of this number 493 were steam and 49 motor-driven. Of the 49 registered motor-driven vessels 16 were registered as combined cargo and passenger carriers and 35 as pleasure boats. As the registration of pleasure boats is not compulsory, however, it is believed that there were at least that many more unregistered, since the officials in charge are notably lax.

Of the 542 registered vessels plying the inland water-



Crude water front facilities are general throughout the province

ways of the Canton Delta the vast majority are launches used for towing passenger and cargo junks, by which form of conveyance the great bulk of the passenger and freight traffic in the Delta is carried on. It is in the supplying of American marine engines, particularly the type operating on fuel oil, for this type of vessel, that it is believed that a market exists.

While there is and probably will continue to be some demand for gasoline and kerosene marine engines in pleasure craft the high cost of both gasoline and kerosene acts as a powerful restriction.

But in view of the lower operating and standby expenses of fuel-oil engines as compared with steam engines, it is felt that there is an excellent potential market for fuel-oil engines to be used in tow-launches in the Canton Delta, and possibly for other application.

The Machinery Division of the Bureau of Foreign and Domestic Commerce at Washington will be glad to co-operate with American manufacturers desirous of securing some of this business, and further particulars may be obtained either by a personal call or by correspondence.

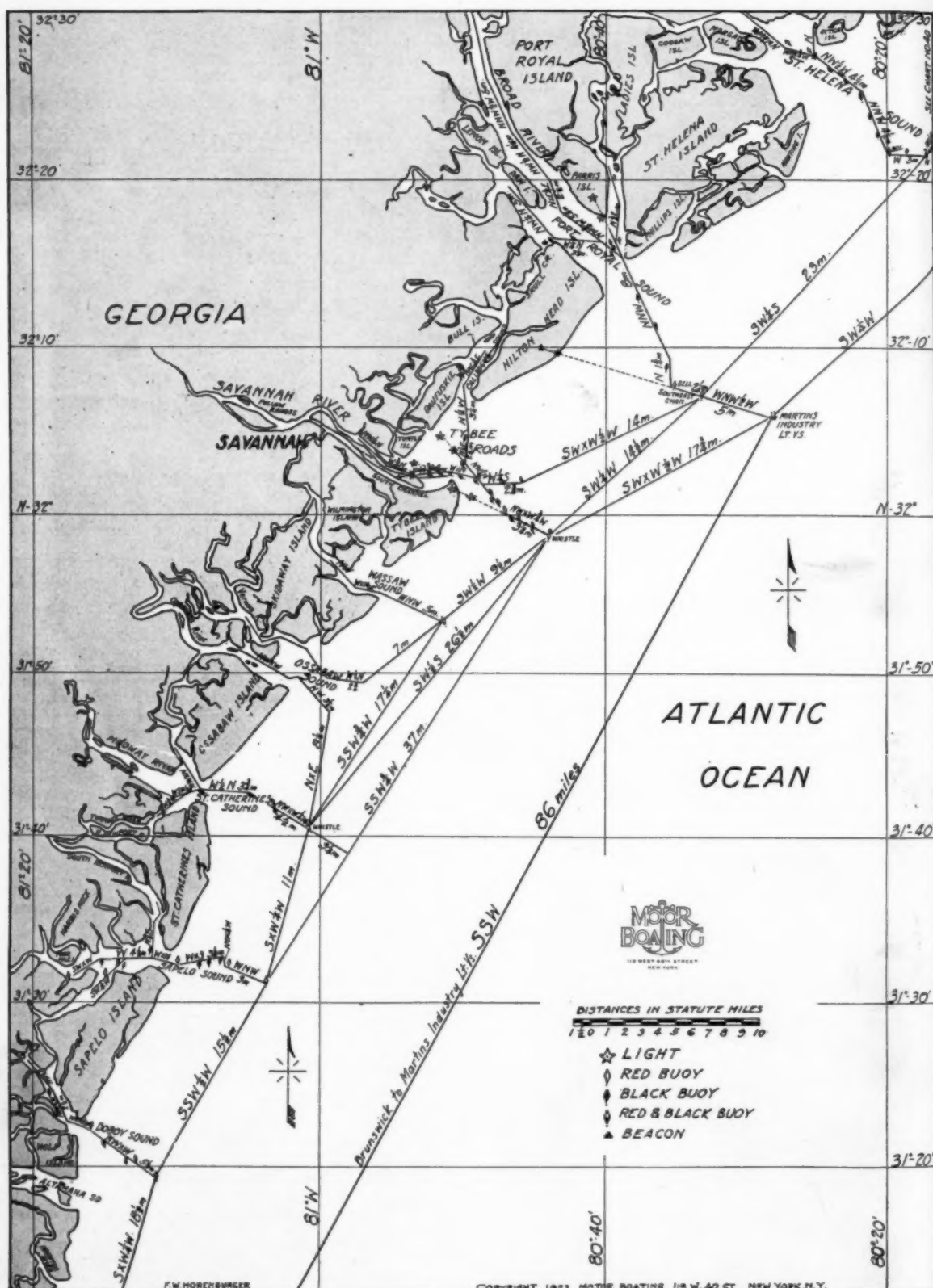
Questions and Answers on Lesson No. 12

Flags and Colors—Yachting Etiquette—Signalling

1. Q: Describe the Yacht ensign.
A: Rectangular flag, 13 horizontal stripes, alternate red and white, top and bottom stripes being red. Blue field containing white fouled anchor, and thirteen stars around same.
2. Q: Describe the American ensign.
A: Rectangular flag, 13 horizontal stripes, alternate red and white, top stripes being red. Blue field containing 48 white stars.
3. Q: What is the shape of the Club Burgee?
A: Triangular.
4. Q: What is generally the shape of the owner's private signal?
A: Swallow tail.
5. Q: What is the shape of a flag officer's flag?
A: Rectangular.
6. Q: Describe the owner's absent flag.
A: A blue rectangular flag.
7. Q: Describe the guest flag.
A: A blue rectangular flag with a white diagonal stripe.
8. Q: What time are colors hoisted?
A: 8 A. M.
9. Q: What time are colors taken in?
A: Sundown.
10. Q: From whom is the time to hoist or lower colors taken?
A: A naval vessel if one is present, a naval station if near one; from the senior flag officer present, if any; or from the senior member present.
11. Q: When is owner's absent flag flown?
A: At all times when the owner or guests are not on board.
12. Q: When is the guest flag shown?
A: At all times when the owner is not on board, but his guests are.
13. Q: If one belongs to more than one Yacht Club should he display more than one Club Burgee at a time?
A: No.
14. Q: If one belongs to more than one Yacht Club which Club Burgee should be flown?
A: If he is in the anchorage of a club, he is a member of, or with a fleet of a club he is a member of, he should fly the club burgee of that club. On other occasions the owner may choose which club burgee.
15. Q: When is the United States Jack flown?
A: On Sundays, holidays, or special occasions when at anchor, only.
16. Q: During what hours is a flag officer's flag flown?
A: Day and night when the yacht is in commission.
17. Q: Does a person who is a flag officer fly his officer's flag or his private signal or both?
A: His flag officer's flag.
18. Q: If one who is a flag officer of a club is cruising with or at the anchorage of another club of which he is a member but not an officer, should he fly his private signal or his officer's flag?
A: His private signal.
19. Q: Is it proper to ever fly two flags from the same hoist?
A: No.
20. Q: Is it ever permissible to fly a flag with a name spelled out thereon?
A: No.
21. Q: An open boat having only bow and stern staffs, flies what flags?
A: The ensign aft and either the private signal or the club burgee when under way. When at anchor, the club burgee should be flown forward.
22. Q: Where is a flag officer's flag displayed on an open boat?
A: It may be flown from a special staff placed forward of the cockpit.
23. Q: A boat having bow and stern staffs and signal mast, displays what flags and from where?
A: Club burgee forward; ensign aft; private signal or officer's flag from the signal masthead; absent, guest or owner's meal flag starboard yardarm; crew's meal pennant from port yardarm.
24. Q: Where is the owner's absent flag flown?
A: Starboard yardarm on single masted vessels; main starboard yardarm, two masted vessels.
25. Q: Where is the guest flag flown?
A: Same as No. 24.
26. Q: Where is the owner's meal flag flown?
A: Same as No. 24.
27. Q: Where is the crew's meal pennant flown?
A: Port yardarm on single masted vessels; and fore port yardarm on two masted vessels.
28. Q: Is it ever permissible to fly a flag before 8 A. M. or after sun-down with the exception of the flag officer's flag?
A: Once.
29. Q: A boat with two masts flies what flags and where?
A: Jack from jackstaff when at anchor only on Sundays or holidays; club burgee from main fore masthead; officer's flag or private signal from main masthead; crew's meal pennant from fore port yardarm; absent, guest, and owner's meal flag from main starboard yardarm; ensign aft.
30. Q: Should a U. S. Government Vessel or a commercial craft fly the Yacht ensign?
A: No.
31. Q: What flags are flown by a club tender?
A: Ensign aft; yacht club burgee forward when the owner is on board, flag officer's flag when the flag officer is on board.
32. Q: What flag is flown by a boat in a race?
A: Racing flag only.
33. Q: Where is the ensign flown on a sailing craft under way?
A: At the peak.
34. Q: Where is the ensign flown on a sailing craft at anchor?
A: From a staff, aft.
35. Q: Where is the ensign flown on an auxiliary yawl?
A: At the mizzen masthead.
36. Q: What flag is half-masted to indicate the death of a citizen of national importance?
A: The ensign.
37. Q: What flag is half-masted to indicate the death of a club member?
A: The club burgee.
38. Q: What is the proper procedure in destroying or disposing of a national ensign which has become worn out?
A: Burn it with reverence, in private.
39. Q: What is the proper method of exchanging salutes?
A: Dipping the ensign once.
40. Q: What is the procedure in half-masting flags or hauling down flags from a half-masted position?
A: In half masting flags, they should be mastheaded before placing them at half mast. In hauling down flags from half masted position, they should first be mast-headed.

Motor Boatman's Chart No. 41, Georgia Coast—From St. Helena to Doboy Sounds

For Use in Connection with Coast and Geodetic Survey
Charts Nos. 157, 436, 440, 441, 443, 444, 446, 571, 1240, 1241





Sailing 50-Mile Boats Like Riding Wild Waves

The Danger and Thrills of Piloting One of Gar Wood's Speed Demons Through Choppy Waters of the Pacific—The Narrow Escape From Collision

By Robert Edgren

THE greatest sensation of speed in the world is in a fast hydroplane driven against a choppy sea, thirty miles out from the mainland.

I've raced speed boats in inland waters, ridden in airplanes that dropped thousands of feet in air pockets, driven 106 miles an hour on a board track in a racing car, gone down a mountainside on skis and done a bit of about everything else. I ought to know.

I went down to ride in Miss Detroit VI with Gar Wood in the deep sea race around Catalina Island off the Southern California Coast. We stood in the boathouse marking our course on a chart. Gar hadn't taken a trial trip.

"When you get around the northern end of the island," said the local yachtsman, "you want to keep off shore a little if there is any sea running. There's 1,000 feet of water right up to the cliffs, and if you break down, the ocean swells will sweep you in on the rocks in no time. They go straight up—no beach or landing place. I've seen waves break up those cliffs 100 feet high. Don't hit any driftwood along there!"

"Listen," said Gar Wood, "Charlie Chapman of New York will drive, and Jay and Bernard Smith will run the engines, and you and I will sit in the cockpit forward to keep a watch ahead. It'll be rough riding up there, but this is one time we don't want to hit anything. A log might take the bottom right out of the boat. We'd go down in a minute."

"Fine!" I said, "I like the rough stuff anyhow!"

Aboard the boat Gar picked up a life preserver and began strapping it on.

"Going to wear that thing in this big boat?" I asked.

"You bet your life!" said Wood. "You put yours on, too. And I've got my two Teddy Bears in the boat for luck. Never race without 'em."

Coming to the starting line, one boat, the Lincoln, struck a log and lost a propeller and shaft, being put out of the race.

The rest started, and Frank Garbutt's Mystery, powered with two Liberty motors, like Miss Detroit VI, shot away into the lead.

We, in Miss Detroit, took her pace, 100 yards to starboard. We were looking for driftwood. The sea was almost smooth. We dodged floating kelp now and then, a stick or two, and a bit of floating plank 10 miles off shore.

But the old Pacific was fairly clear.

Five miles from Catalina, Mystery, which had been running like a sea witch, cutting smoothly through the choppy waves that Miss Detroit skipped over, suddenly sent up a

few puffs of black smoke and lost speed. A valve had broken.

Gar Wood slowed Miss Detroit down until he got a signal that Mystery was in no danger, and we speeded up again, and went smashing through the tide rip around Catalina's northern cape.

High rocks rose from the sea.

Around the Cape we were on the ocean side. For miles great perpendicular cliffs rose from the sea, the Pacific rollers crashing at their foot and tossing white sheets of spray high up the face of the rock. Above were jagged mountains, their slopes covered in places with soft green brush, but for the greater part volcanic peaks and ridges, like rows of shark's teeth in lava.

Twenty-two miles along the rock wall that Catalina opposes to the Pacific, far enough off shore for safety, Miss Detroit was running smoothly as the swell rolled under her. The ocean was a lonesome place. Far out ahead, along in the race, we throttled down and loafed along easily. One steam trawler in sight to seaward.

Then we clipped around the southern cape and left the island behind. A low brown haze of smoke driven by an offshore wind obscured all land but the snow-covered top of Old Baldy, 80 miles away in the Sierra Madres.

We took compass bearings and headed into the haze, which seemed to lift continually a few hundred yards away.

Running ahead of the big ocean swells, Miss Detroit dived again and again as she reached the bottom of the hollow between and started up the wall of water ahead, but throwing great white walls of spray on either side, rose buoyantly and climbed over the ridge, to plunge into the valley on the other side.

And then, suddenly, we were out of the rolling swells and in a choppy head sea where a shifting wind blew against the tide.

Miss Detroit VI is a big boat, 38 feet long, 8 feet beam, high sided and light as a cork. The engines are well aft, and the steersman and two mechanics sit squarely in the stern.

The cockpit where Wood and I were was well forward, and Miss Detroit is light and buoyant in the bow. Running at anything over forty miles an hour, Miss Detroit rises nearly out of the water, sliding along on top like a sled on frozen snow.

On the rough water she began to jump. In the bow it was like riding a bucking cowpony. We'd leap one wave and drop three or four feet into the hollow, only to strike another wave rising and being thrown violently upward again.

It was impossible to sit on the seat in spite of a thick

(Continued on page 68)

Yachting Booming In Southern California

The Story of Yachting on the Pacific Is One of Remarkable Progress and Enthusiasm—The Fusion of Clubs Marks an Epoch in Their History

By Admiral Albert Soiland

THIS season marks one of the most eventful in the history of the manly sport of yachting on the Pacific Coast, and in this wonderful southland of ours, yachting in its broadest sense has kept full pace with all other progressive developmental efforts.

It is regrettable that up to the present time comparatively few of Southern California's citizens have availed themselves of the splendid health giving opportunities afforded by work and play upon the broad expanse of our own Pacific Ocean. Perhaps one of the fundamental reasons is a lack of knowledge pertaining to affairs nautical, or perhaps it is due to a fear of unknown or fancied dangers connected with venturing out to sea in small craft. Again it may be that the belief, more or less general, that yachting is merely an expensive luxury which can only be enjoyed by millionaires, deters many from becoming acquainted with the sport. It may be well to state here that none of these reasons are valid.

In all the years that the writer has devoted his spare time to yachting as a means of keeping physically fit to cope with life's struggles, he cannot recall a single fatal catastrophe occurring to any one or group of yachtsmen belonging to the clubs on the south coast. True, venturesome lads, members of our local clubs, have often put out to sea in small and unsafe boats, and many of these have on different occasions had some trying and harrowing experiences, but these very hardships have put the fear of God into the hearts of these lads, have taught them self reliance, and given them a wholesome respect for the elements they set out to conquer. In fact, these are the very boys who during the late world war so gallantly manned the ships of our Navy to the everlasting glory of our cause.

In regard to the expense of enjoying the sport and maintaining a yacht, this is such an elastic problem that it can be made to fit any individual, and any purse. It is not always the owner of the most expensive and elaborate yacht who gets the most pleasure and benefit from yachting. On the contrary, a little open boat with a toy motor or a small dory with a leg of mutton sail is the seagoing yacht of many a proud young skipper, who sails the raging main undaunted, and no one on earth gets more keen, healthful joy out of life than he. It is to such young men that the yacht clubs of Southern California bid welcome.

The season just passed has witnessed a wonderful growth in all yachting activities. The amalgamation of the South Coast Yacht Club with the Los Angeles Motor Boat Club, and later the fusion of these with the new and progressive California Yacht Club of Los Angeles marks an epoch in our history. The reinforced California Yacht Club, with its beautiful new building and anchorage basin, now has a membership of nearly twelve hundred, which together with the combined fleet, constitutes the largest yacht club on the Pacific Coast. Another progressive organization is the Newport Harbor Yacht Club, located on Newport Bay in Orange County. This is just twenty nautical miles from the California Yacht Club anchorage at Wilmington,

and on the placid bosom of this land locked bay lies the second largest fleet in local waters.

Santa Barbara on the north, and San Diego on the south have taken on renewed yachting activities. The clubs from these cities, together with those from Newport and Los Angeles, have formed an association called the Southern California Yachting Association for the specific purpose of correlating their work and interests. That this was a wise move has been amply verified by subsequent events. The first combined regatta held at Santa Barbara brought to that city the largest collection of seagoing yachts that has ever been seen on that beautiful bay. The result is that Santa Barbara has already taken actual steps toward procuring for itself a safe harbor. The second regatta held by the Association was the recent one at Newport where one thousand yachtsmen registered, a number never before equalled by any yachting affair on the entire Pacific Coast of America. The next regatta will be

held at Santa Barbara in August, 1923, and so keen is the anticipation of this event that plans are already underway for its successful consummation.

The activities of the Southern California Yachting Association have more than a local interest. Through its efforts, it is calling the attention of eastern and foreign men of affairs to the desirability of Southern California as an all year round resort. It is now an assured fact that just as soon as we can provide adequate anchorage facilities in protected waters, we will have these filled with the fastest motor boats and the most luxurious yachts from all the seven seas. Just stop and think what this will mean to the commerce and finances of Southern California!



Admiral Albert Soiland, of the Southern California Yachting Association

Yard and Shop

Notes of Interest to Both Owner and Manufacturer

Commodore A. L. Judson Dies

As we go to press with this issue we learn of the sudden death of Commodore A. L. Judson, President of the American Power-Boat Association. His death will leave a gap in the ranks of the motor boat fraternity which it will be hard to fill. Commodore Judson has been at the helm of the American Power-Boat Association for many years and his loss will be keenly felt.

Caps for Y. A. A.

The distinctive form of uniform cap for the Yachtsmen's Association of America will be made in Brooklyn, N. Y., by B. Schellenberg & Sons, the yacht outfitters. The sample cap which was submitted to the association more than filled the requirements and it has been adopted as a standard. All members of the Yachtsmen's Association will be enabled to secure their caps from the association or from the firm of B. Schellenberg directly.

Educational Lectures

A new series of navigation lectures is being conducted in Brooklyn and in New York by the Brooklyn and Huguenot Squadrons of the United States Power Squadrons, Inc. Those in Brooklyn are being conducted at the Central Branch Y. M. C. A. on Tuesday evenings commencing February 20 and the lectures will follow the usual program. At the New York Athletic Club in New York the series will begin on March 5 and continue through consecutive Monday evenings beginning at 8 o'clock. These talks will be given by several members of the squadrons and will be interesting to all who are



Nonie, a Hacker designed 26-footer owned by Lee N. Parrish of Hamilton, Ohio, which is powered with a new model E4 Scripps engine with hot spot manifold, speed 26 m.p.h.

Schedule of 1923 Racing Events

- June 23-24—New York, Atlantic City and Return Columbia Yacht Club, N. Y. and Atlantic City Yacht Club.
- June 30—Express Cruiser Championship of America, Cruiser Championship of Connecticut River, Middletown Yacht Club.
- July 7—New York to Block Island, New York Athletic Club.
- July 15—Round Manhattan, New York Motor Boat Club.
- July 28-Aug. 12—Chicago Regatta, International Trophy.
- Aug. 4—American Power-Boat Association Handicap Cruiser Championship of America, Philadelphia Yacht Club.
- Aug. 9-11—Fisher-Allison Trophy Race, Chicago, Ill.
- Aug. 11—New York to Newburgh and Return, New York Motor Boat Club.
- Aug. 29-Sept. 2—Gold Cup Regatta, Detroit Yacht Club.
- Aug.—28-Foot 1100 Cubic Inch Class Runabout, National Championship Trophy, Lake George, New York.
- Sept. 3—150 Mile Sweepstakes Race, Detroit Yacht Club.
- Sept. 6-9—Toronto Races, Toronto Motor Boat Club.
- Sept. 13-15—Regatta of Buffalo Launch Club, Lehigh Trophy Race, Interstate Trophy, Buffalo, N. Y.

students of yachting in its better forms. There will be no fees of any kind connected with these classes.

Winners

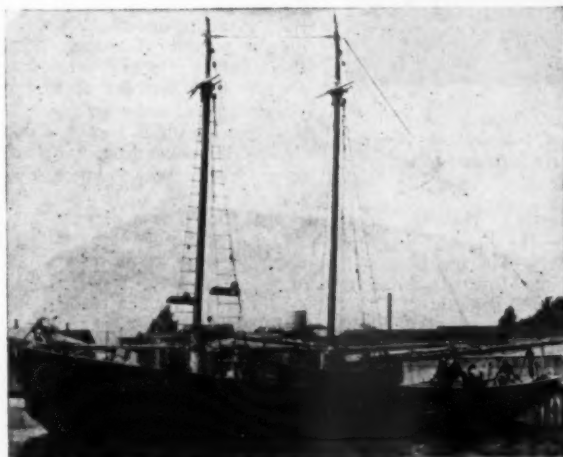
Winners, the little bookiet published by the Edward Smith Company in which are listed the results of the past season's racing in both motor and sail classes will be ready soon. This will make the nineteenth edition of this popular little book and this one will have in addition to racing results some interesting articles on the events of the coming season. MoToR BOATING readers can secure a copy by addressing Edward Smith & Co., 127 West Avenue, Long Island City, N. Y., if they mention this magazine when writing.

Export Service Improved

As a means of giving the best possible service to their many customers in foreign markets, the Caille Perfection Motor Company of Detroit have transferred their Export Department of row boat motors to Melchior, Armstrong & Dessau, New York, N. Y. Through this arrangement it will be possible to make prompt shipment on all foreign orders. The demand for Caille row boat motors is constantly increasing and the company reports that the outlook for 1923 is most satisfactory, in fact promises to be one of the largest they have ever had. All Caille row boat motors can now be had equipped with American Bosch Magneto, which brings these motors to a high state of perfection. New catalogs have been prepared and can be had for the asking.

Speedy Fisherman

A recently completed fishing cruiser intended particularly for service in Florida has just been turned out in Miami. This boat was built for O. J. Mulford of Detroit and has been equipped with a unique power plant. In her 40-feet of length have been stowed away three of the little Gray motors which give her a total of approximately 100 h.p. These motors are small units and work with practically no vibration at all. They can be operated with either one, two, or three motors in motion, which gives a most unusual smoothness to the boat and at the same time permits a very excellent speed when all machines are working.



The 72-foot fishing schooner Lincoln which operated for four weeks on a total cost of only \$140. The four cylinder 95 h. p. Wolverine fuel oil engine which is installed is a most economical plant

Man's Country

A Big Novel of Motordom and How It Came to Be Written

By Gerald Hewes Carson

WHEN Peter Clark Macfarlane went to Detroit in 1915 commissioned by a magazine to write a series of historical articles on the growth of the automobile industry, he was recognized as our most successful interviewer of great men, an engaging writer of magazine articles, and a lecturer of great popularity. Since then Macfarlane has established himself firmly as a novelist and short story writer, but it was not until the appearance of his new novel, *Man's Country*, which has just been published, that Peter Clark Macfarlane caught in the pages of fiction the romance of the business whose history he wrote eight years ago.

Man's Country is unquestionably the long-awaited romance of the automobile industry. Why this theme, the most stirring one in modern American business life, has never before been adequately treated it is hard to say. But here we have from the pen of a novelist who knows his Detroit, and who has studied his history right on the spot, the story of the early struggles against popular ridicule of such men as Henry Ford, R. E. Olds, Henry Leland, Henry Joy, and a score of others who had the vision of the place the motor car was to take in our civilization. It is a giant business brought into existence by giant men; and yet it is only of yesterday and today, with a history so short that all the giants save two, and all the pioneers save one, are still living. There is romance, there is heroism, there is tragedy in those lives.

George B. Selden, the lawyer in Rochester, actually got what was supposed to be the basic patent of the industry in 1895. His eccentric-looking car, although not finished until automobiles were chugging in a score of cities, was in a sense the daddy of them all. But the courts held that Selden had guessed wrong: that his papers described the two-cycle gas engine while the four-cycle engine had come into universal use. That was Selden's tragedy. His name is on no automobile in the world.

There were other pioneers who were ill-fated. Charles E. Duryea, scholar, scientist, the first man in America to feel the chug of gasoline beneath his

feet, has no control today over the car which bears his name. Charles B. King, who built the first automobile that ever rolled over the streets of Detroit, and whose attractive personality strolls through the early pages of *Man's Country*, was satisfied with his premiership. He dismantled his car and gave away the parts to Henry

George has declared that he saw a wagon without any horse rolling along in the twilight. From this point Macfarlane whips his story on at a breathtaking pace. Judson rises so rapidly that by the time he is twenty-six he is recognized as a brilliant executive in the motor world, and one of the financial wizards of Detroit.

Then George Judson marries. We come now to the intimate human side, what is often the tragic human side, of business success. It is a story of the business man's wife—the forgotten woman.

As the wedded life of George and Fay Judson unfolds, Macfarlane shows how the self-made business man, for all his chivalry and kindness, is inclined to take his wife's love more or less as a matter of course. He is too busy to share her social and cultural interests. He does not know how gladly she would exchange a little prosperity for more companionship. Often the wife turns, as Fay did, to social interests, to vague dreams of her own wonderful Garden of Eden, perhaps to other men, to fill the place in her life which her husband has left void.

George and Fay Judson finally reach the very brink of domestic catastrophe. Fay leaves her home. The current of their lives seems to have been divided on the rock of Business. But there is much sound sense and a great love between these two young people, and when, months later George finds Fay standing in her room—smiling, her arms open for him—we know that the dark days of jealousy are past, and that the conflict between love and business has been forever stilled in a new vision, a more flexible sympathy.

Man's Country is rich in texture; its human values plumb clear down to the bed-rock of our national virtues—and faults. We have had our fill of satirical and cynical portraits of the American business man. In Judson we see him as he really is; provident, often wrong-headed, but chivalrous, substantial, and never petty. This is an honest, sincere book, an absorbing document in the history of the automobile, a story of a strong love threatened by the peril of business, and of how it was preserved from disaster.



Peter Clark Macfarlane, whose new novel, Man's Country, has just been published, believes that American women are jealous of their husbands' business

Ford, and other friends. Haynes, Winton, Thomas, Olds—the list could be carried on indefinitely—George N. Pierce, Roy D. Chapin, Howard E. Coffin—each has contributed something to Macfarlane's tale of the early-day struggle with problems of manufacture, with problems of distribution and finance.

Here is the fabric of a fascinating novel. Automobile manufacture is a peculiarly American industry. Its great men have been almost without exception Americans. Macfarlane draws a typical American boy, George Judson, a grimy youngster, whom we first see in a rough and tumble fight with his brother Jimmy, because

"Intrepid"—a Winner by 12 Hours!

A thrilling race was the last Chicago Yacht Club run of 331 miles to Mackinac Island. Eleven entries—seven in at the finish—"Intrepid" first. She came in 12 hours ahead of the second boat—the biggest winning margin in the history of this famous race.

In her running time of 56 hours and 35 minutes, "Intrepid" weathered rain squalls and dense fogs, cross seas and shifting winds—and blows that buried her lee rail in a smother of foam.

"Intrepid" is Valsparred of course.

Practically all winning boats are Valsparred. Yachtsmen the world over recognize that Valspar is the varnish without peer. Unharmful by weather or wave, always lustrous, unspotted and undulled, Valspar is the only varnish that *never* turns white.



VALENTINE & COMPANY

Largest Manufacturers of High-Grade Varnishes in the World—Estab. 1832
New York Chicago Boston Toronto London Paris Amsterdam
W. P. FULLER & Co., Pacific Coast



"Intrepid"—A Class "P" sloop.
The proud owners are D.
Prather and V. Farrell of the
Chicago Yacht Club.
Photo by Wm. Duffy

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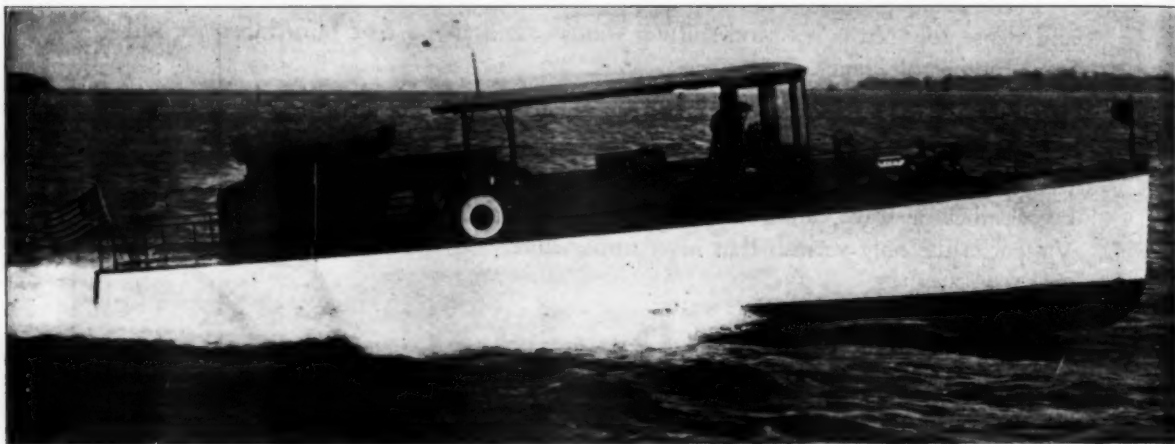
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OVER 60,000 MILES WITHOUT A BREAKDOWN!

That is the racing and cruising record of the GAR JR. II, holder of cruiser championships, and from which these remarkable GAR JR. FLYERS have been developed.

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The roomy bridge deck has thwartship seat directly aft of steersman, accommodating four or five persons, besides four large individual leather-upholstered seats. There is also a forward cockpit seating three or four persons and good-sized after deck.

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Accommodation includes generous crew quarters forward with toilet room, lockers, etc. Aft is owner's cabin with two hinged berths, toilet room and galley.

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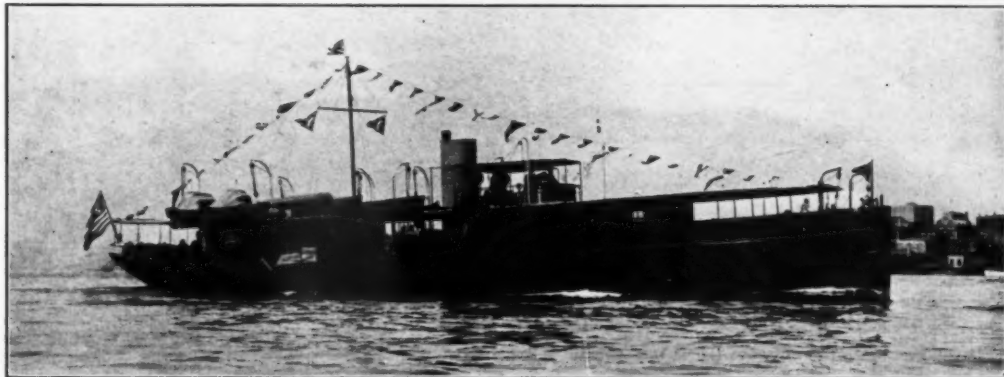
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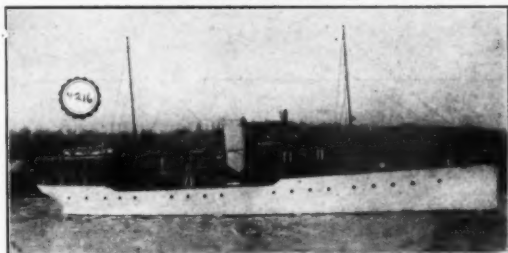
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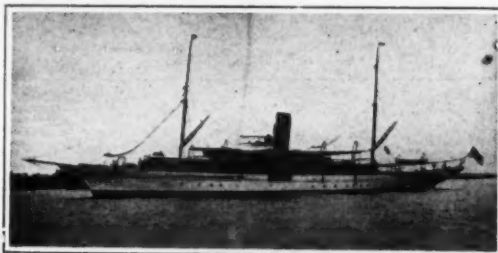
On this page are shown a few representative yachts selected from our large lists. Should none appeal kindly acquaint us with your requirements. Full information regarding costs to build, purchase or charter yachts of all types gladly furnished.



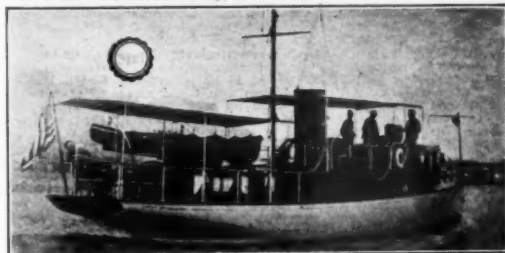
No. 3830—For Sale—The only large, desirable twin-screw Diesel-Motor Yacht available; 145 x 20.3 x 7.6 ft. Built 1920. Speed up to 14 miles; two 250/300 H.P. 6 cyl. Winton-Diesel engines. Splendidly kept up vessel. Handsomely finished; tastefully furnished with the best. Large dining saloon and social hall, also stateroom on deck; five staterooms below aft. Only available as owner is having larger yacht built from our designs. Cox & Stevens, 25 Broadway, New York.



No. 4216—For Sale—In commission in Florida. Modern 95 ft. twin-screw motor yacht. Speed 12-14 miles. All conveniences. Deck dining and main saloons; four staterooms. Large deck space. Cox & Stevens, 25 Broadway, New York.



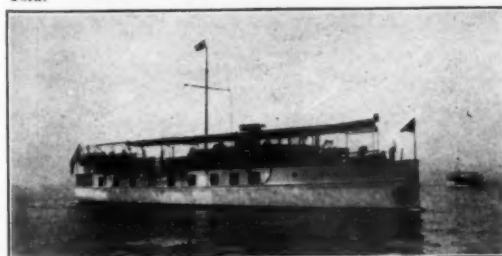
No. 341—For sale or Charter—Large, sea-going steam yacht. Palatial accommodation. Unusual opportunity. Several similar larger and smaller available craft. Cox & Stevens, 25 Broadway, New York.



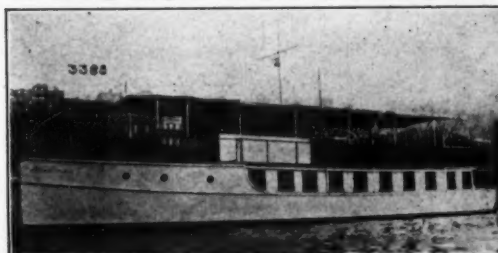
No. 3127—Unusual opportunity to purchase high class 65 ft. handsome twin-screw cruiser at low figure. Construction, finish and equipment of the best. Speed 12 miles; two 50/75 H. P. Speedway motors (new 1920); electric starters, full motor controls on bridge. Excellent accommodation; dining saloon in deckhouse; with galley adjoining; two double staterooms and lobby with transom aft. An inspection will convince prospective buyers; this is one of most attractive offerings available this Spring. For plans and further particulars apply to Cox & Stevens, 25 Broadway, New York.



No. 970—Bargain—Especially desirable 98 ft. Lawley Built twin-screw cruising power yacht. Speed up to 16 miles; Standard Motors. Deck dining saloon, three double and one single staterooms, two bathrooms, etc. Teakwood deck house and deck trim. New furnishings throughout. Cox & Stevens, 25 Broadway, N. Y.



No. 1662—For Sale or Charter—Attractive 90-ft. modern power houseboat. All the comforts of a country home. Large saloon, four staterooms, two bathrooms, handsomely furnished. Cox & Stevens, 25 Broadway, New York.



No. 3385—For Sale—Remarkably roomy, twin-screw motor houseboat: 63 x 16 x 3.6 ft. Speed 11 miles; two 40/50 H. P. "20th Century" motors. Independent lighting plant. Excellent interior layout; attractive deck saloon 12 ft. x 12 ft. leads to dining saloon 10 ft. x 15 ft. below; one double and two single staterooms, bathroom and dressing room forward. Finish mahogany and white enamel. Craft excellently adapted for both northern and Florida waters. Full particulars from Cox & Stevens, 25 Broadway, N. Y.

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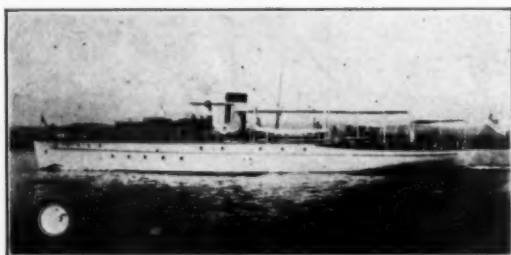
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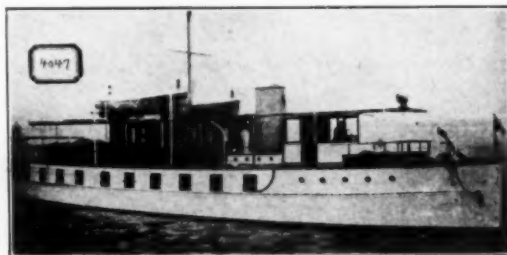
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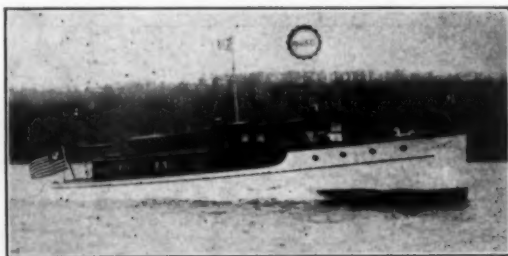
No. 4036—For Sale—Especially fine, recently built, twin-screw power yacht: 84 x 15.6 x 3 ft. Speed up to 16 miles. Built 1920 in best possible manner, regardless of cost. Equipment and furnishings unusually complete and best available. Powered with two 120 H. P. 6 cyl. Speedway motors. Dining saloon and enclosed bridge forward; three staterooms, large bathroom, full width of craft, two toilets and large main saloon aft. Roomy after deck. A handsome cruiser with exceptional speed and accommodation. Unquestionably finest craft of size and type on market. Only available as owner unable to use. For plans and further particulars apply to Cox & Stevens, 25 Broadway, New York.



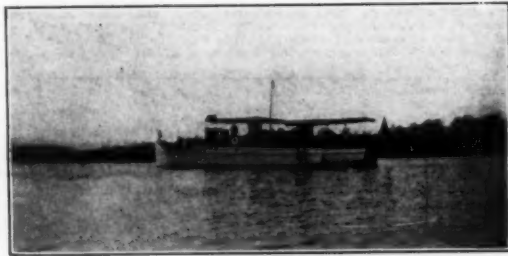
No. 1835—Remarkable Bargain—Attractive, able, twin-screw cruising power yacht: 98 x 16.6 x 4.6 ft. Speed 13 to 15 miles; two 125 H. P. 6 cyl. Standard air-starting and reversible motors. Winton independent lighting set. Large deck dining saloon; four staterooms, two bathrooms. Opportunity for prompt purchaser. For plans and full particulars apply to Cox & Stevens, 25 Broadway, New York.



No. 4047—For Sale or Charter—Particularly desirable, up-to-date, twin-screw motor houseboat: 85 ft. 6 in. long, 18 ft. beam, 3.3 ft. draft. New Fall 1920. Speed 11-12 miles; two 80 H. P. 6 cyl. Winton motors. All conveniences. Splendid accommodation; large combined dining and living room on deck; four double staterooms, two baths and three toilets aft. Beautifully finished and furnished. Strongly recommended to anyone interested in craft of this type. Cox & Stevens, 25 Broadway, New York.



No. 4050—For Sale—Twin-screw express cruiser; 52 x 11 x 3 ft. Built 1919; highest grade construction and finish. Speed up to 30 miles; two 200 H. P. 8 cyl. Speedway motors. Attractive deck saloon; double stateroom and bath aft; separate galley and crew's quarters forward. Especially fine boat of type. Low figure accepted for quick sale; owner has larger yacht. Cox & Stevens, 25 Broadway, New York.

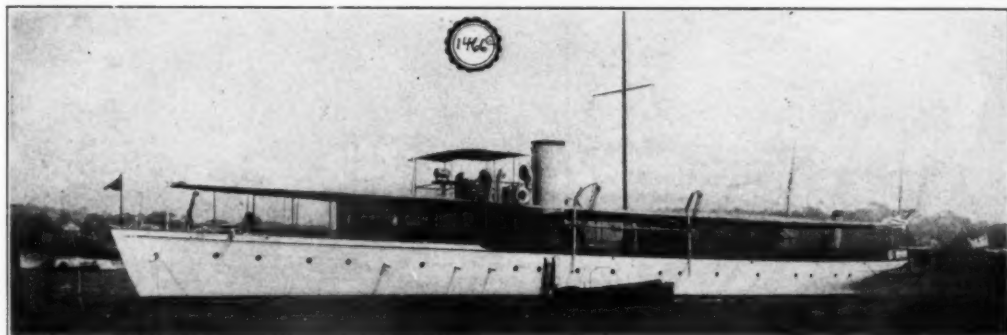


No. 4251—For Sale—Modern 54 ft. bridge deck cruiser. Speed 12 miles; 6 cyl. 75 H. P. Sterling motor. Two extension berths in saloon, two double staterooms, toilet room, separate galley, etc. Constructed in best manner. Motor controls at bridge. Located Great Lakes. Further particulars from Cox & Stevens, 25 Broadway, New York.

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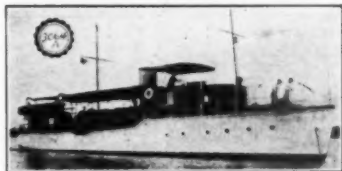
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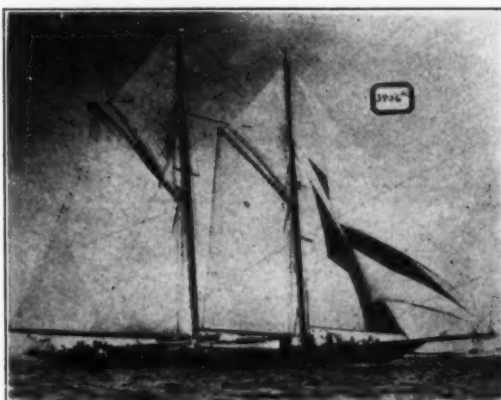
No. 1466—For Sale—Particularly attractive, steel, fast, twin-screw cruising power yacht: 138 x 17.2 x 4.6 ft. Speed up to 18 miles; two 500 H. P. air starting, reversible Standard motors. Beautifully finished and furnished. Large dining saloon in forward deckhouse; social hall or music room in after deckhouse; three double and one single staterooms and two bathrooms aft. Exceptionally fine furnishings (comparatively new). For full particulars, plan, etc., apply to Cox & Stevens, 25 Broadway, New York.



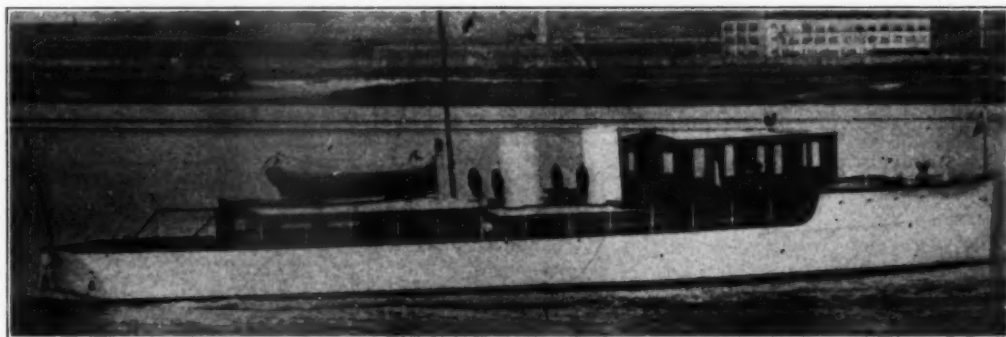
No. 3455—Exceptional Bargain—111 ft. Twin-screw cruising motor yacht. Built 1915. Speed 13 miles; two 75/85 H. P. 6 cyl. 20th Century motors (new 1921). Independent lighting plant. Accommodations include dining saloon and galley forward; large double stateroom, two single staterooms, bathroom and saloon aft. Economical to operate. For further particulars apply to Cox & Stevens, 25 Broadway, New York.



No. 3064—For Sale—In Commission—Remarkably roomy, twin-screw power yacht: 80 x 16 x 3.2 ft. Adapted for both northern and Florida cruising. Speed 11 miles. Constructed from our design in best manner. Interior layout affords maximum accommodation possible: deck dining saloon and galley forward; aft are four large staterooms, two bathrooms and roomy main saloon. Large deck space. Handsomely finished. Motors controlled from deck. Will be sold very reasonable as owner building larger yacht from our designs. Plans and full particulars from Cox & Stevens, 25 Broadway, New York.



No. 3456—For Sale or Charter—Most modern, large, steel auxiliary schooner yacht available (electric-driven): 162 ft. overall, 115 ft. waterline, 30 ft. beam, 18 ft. draft. Construction of highest class; unusually heavy. Lloyd's highest rating. Well known for smart sailing and splendid seaworthy qualities. Accommodations include large dining saloon, five staterooms, two bathrooms and attractive main saloon in deckhouse aft. Power plant most modern type consisting of 150 H. P. Winton-Diesel engine transmitting power through electric motor direct-connected to main shaft. Unusually large fuel capacity. Decks, deckhouse and deck trim of teakwood. Unusually low figure will be entertained for immediate disposal. For full particulars, plans, etc., apply to Cox & Stevens, 25 Broadway, New York.

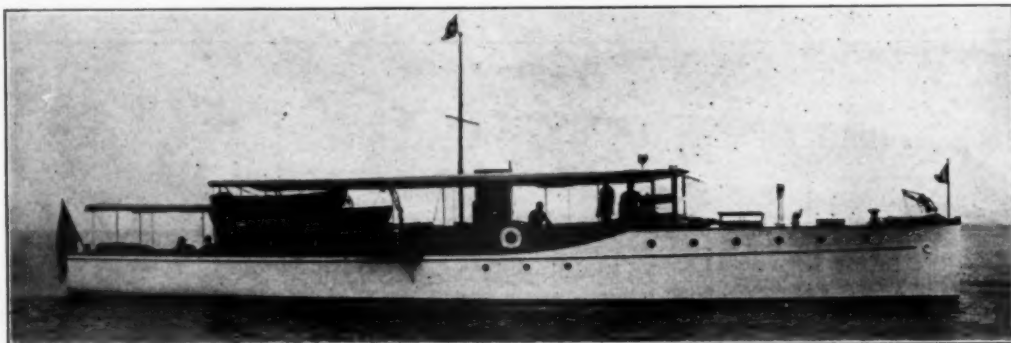


No. 3846—For Sale—Handsome, twin-screw express cruiser: 72.6 x 11.9 x 3.4 ft. Speed up to 22 miles; two 150 H. P. 6 cyl. Murray & Tregurtha motors (new 1920). Excellent construction and finish. Planking of mahogany (double). Roomy deckhouse in addition to double stateroom and saloon; two toilets. Mathews independent lighting plant. Will be sold at attractive figure as owner has built schooner yacht. Cox & Stevens, 25 Broadway, New York.

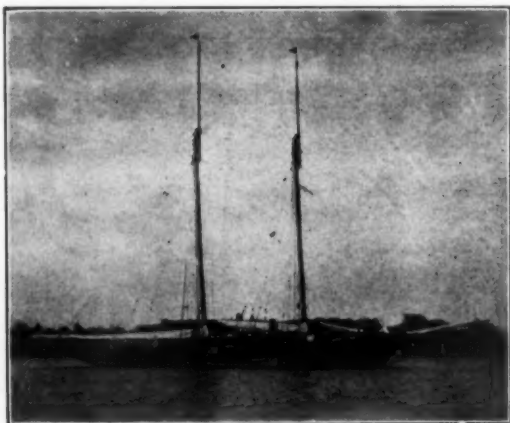
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No. 2815—For Sale—High class, fast, twin-screw power yacht; 80 x 13 x 3 ft. Built 1920. Splendid combination day boat and cruiser. Speed up to 20 miles; two 200 H. P. 8 cyl. Speedway motors. Dining cabin, galley and toilet room forward; two staterooms, roomy saloon and toilet room aft. Unusually good crew quarters. Large bridge deck amidships and cockpit aft. Construction of very best. Highly recommended by us. Excellent condition. Cox & Stevens, 25 Broadway, New York.



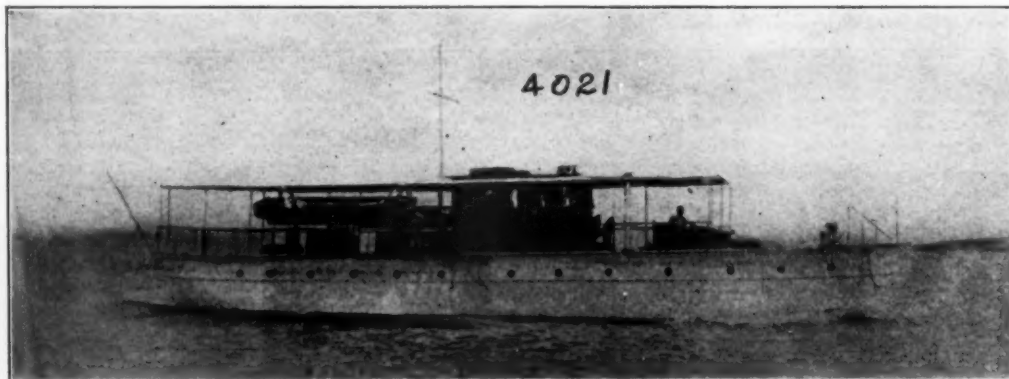
No. 148—For Sale at Low Figure or Charter—Steel, seagoing auxiliary schooner yacht; 131 ft. overall, 110 ft. waterline, 26 ft. beam, 15 ft. draft. Speed under power 10 knots. Large accommodations including roomy saloon, five staterooms, three bathrooms. Splendid deck space. Remarkably able vessel. In 1920-21 large sum spent for many improvements and replacements. Opportunity to secure remarkably able vessel in excellent condition at genuine bargain figure. For plans and full particulars apply to Cox & Stevens, 25 Broadway, New York.



No. 639—For Sale (in commission)—Steel, twin-screw cruising motor yacht; 111 x 21 x 4 ft. Excellently adapted for both northern and Florida cruising. Speed 12 to 14 miles; two 125 H. P. air starting, reversible Standard motors. Large saloon, five staterooms, two bathrooms. Perfect ventilation. Mahogany finish throughout. One-ton ice machine and radio set just installed. Plans and further particulars from Cox & Stevens, 25 Broadway, New York.



No. 3268—For Sale or Charter—Bridge deck motor cruiser; 65 x 14 x 3.6 ft. Speed up to 15 miles; 150 H. P. 8 cyl. Sterling motor (new 1920). Accommodation includes saloon, two double staterooms, bath and two toilets. Interior finish mahogany and white enamel. Electric lights. Good seaboat. For further particulars apply to Cox & Stevens, 25 Broadway, New York.

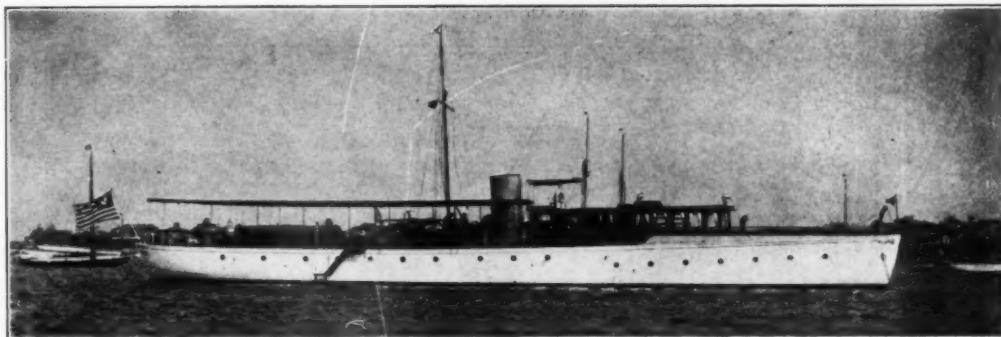


No. 4021—For Sale—Very roomy cruising power yacht, 70 x 13 x 4 ft. New 1920. Speed 11 miles; 6 cyl. 70/90 H. P. Winton motor. Dining saloon, large galley and toilet room forward, two double and one single stateroom and bathroom aft. Large deck space. Heavily constructed. Economical to operate. Price low for practically new high grade cruiser of her dimensions. Cox & Stevens, 25 Broadway, New York.

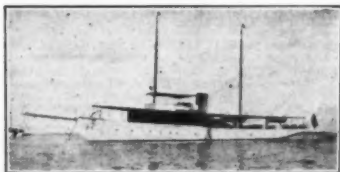
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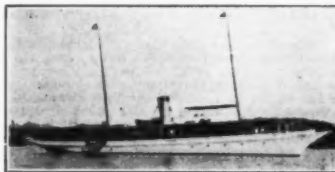
No. 885—For Sale at Attractive Figure—Handsome fast Steel, twin screw cruising power yacht; 118 x 15.6 x 5 ft. Speed 15 to 16 miles; two 225/250 H. P. Winton motors (new 1920). Exceptional accommodation includes dining saloon and galley on deck; three double staterooms, main saloon, two baths, three toilets. Remarkably able craft. Built from our designs. Plans and full particulars from Cox & Stevens, 25 Broadway, New York.



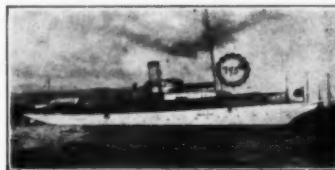
No. 1225—Offered by Estate—Fast, able, twin-screw power yacht; 137 x 15.0 x 7.8 ft. Speed up to 18 miles, two 300 H. P. 6 cyl. Speedway motors. An attractive Lawley-built craft with unusual deck space. Deck dining saloon and smoking room, three double staterooms, after saloon, bathroom and three toilets. In excellent condition. Hull double planked. Interior finish mahogany and white. Low figure accepted for immediate sale. Full particulars from Cox & Stevens, 25 Broadway, New York.



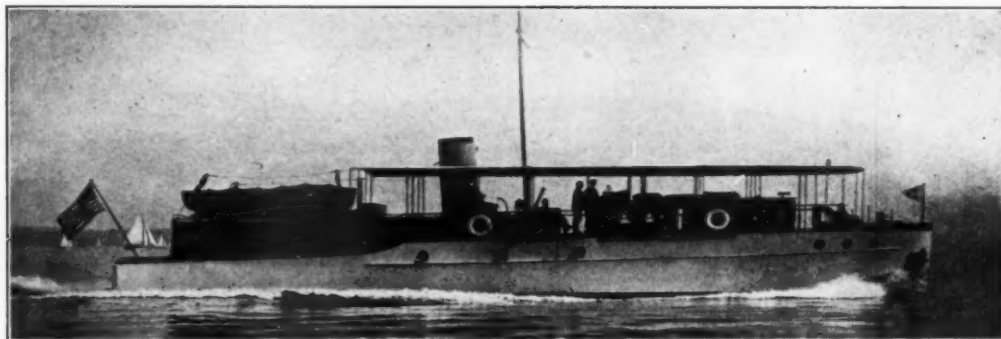
No. 854—Bargain—Desirable flush deck steam yacht; 103 x 15.7 x 5 ft. Seabury build. Speed 12 knots; triple expansion engine. Exceptional accommodations; dining and main saloons in forward and after deck-houses; two single and two double staterooms, bath and two toilets aft. Very economical to operate. Has had excellent upkeep. Low figure accepted for quick sale. Full particulars from Cox & Stevens, 25 Broadway, New York.



No. 40—For Sale or Charter—Especially desirable steel steam yacht; 140 x 17.6 x 7.6 ft. Lawley built; has had most careful upkeep. Speed 12-14 miles. Dining saloon in forward deckhouse, living room in after deckhouse; below aft are two double, two single staterooms and two bathrooms. New main engine and boiler 1916; economical to operate. Low figure will be accepted for immediate sale. Cox & Stevens, 25 Broadway, New York.



No. 995—Bargain for Quick Sale—Able, modern steam yacht, 168 x 21.6 x 10 ft. Built 1909, in best manner. Speed 12 knots; triple expansion engine, all conveniences. Excellent accommodation includes deck dining saloon forward; social hall in after deckhouse. Six staterooms and two bathrooms below aft. In good condition. Opportunity for any one interested in vessel of this type as owner anxious for immediate disposal. Cox & Stevens, 25 Broadway, New York.



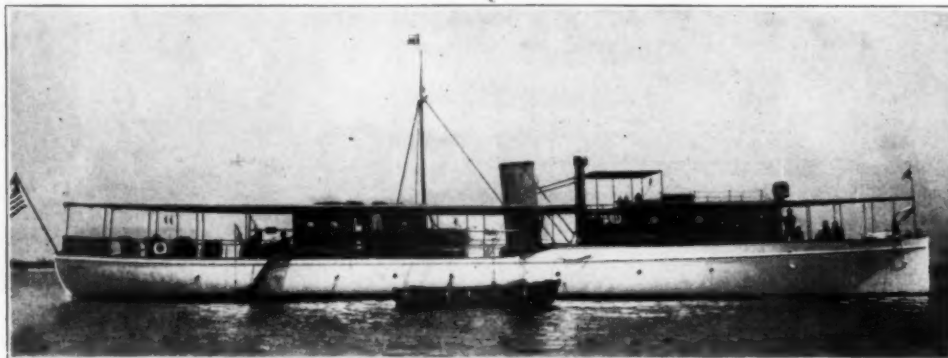
No. 3690—Attractive Bargain—Fast, heavy twin-screw power yacht; 80 x 16 x 3 ft. Built 1919. Speed up to 20 miles; two 6 cyl. Murray & Tregurtha motors. Construction and finish of the very best. Large forward saloon with toilet and bath; two staterooms aft with toilet room; large enclosed cockpit aft. Built regardless of expense and one of the finest craft of kind ever produced. Exceptional opportunity as owner anxious to sell being unable to use. Cox & Stevens, 25 Broadway, New York.

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112-FOOT LAWLEY-BUILT, CRUISER, WITH TWO 220-H.P. STANDARD ENGINES

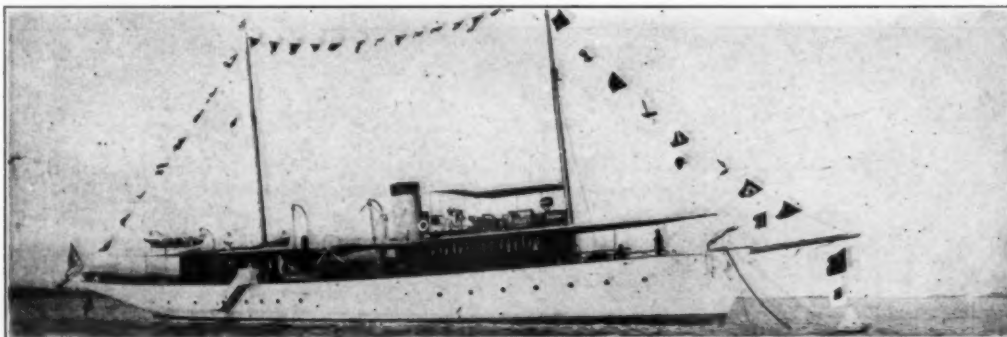
1250—For Sale—Especially desirable, able, fast twin-screw, cruising power yacht: 112 x 15.6 x 5.8 ft. Lawley built; speed up to 16 miles; two 220 H. P., 6 cyl. air starting and reversible Standard gasoline motors (used one season). Fitted with all conveniences, including Winton Independent generating set (new 1922); hot water heating plant, etc. Deckhouse and deck trim of teak wood. Accommodations exceptionally large, consisting of deck dining saloon forward, social hall in after deckhouse; two double, three single staterooms, bath and two toilets below aft. Sleeping accommodations for eleven besides crew. Interior mahogany and white enamel. Very best construction. Last year about \$25,000 spent on improvements and replacements. Unusually complete equipment including motor tender and dinghy. Attractive opportunity to secure exceptional value as owner has acquired larger vessel. For plans, further particulars and inspection apply to Cox & Stevens, 25 Broadway, New York. Telephone No. 2700 Whitehall.



No. 3168—For Sale—Steel steam yacht, 127 ft. overall, 101 ft. waterline, 16.3 ft. beam, 7.2 ft. draft. Speed up to 15 knots; triple expansion engine. Electric lights; steam heat; deck dining saloon forward; social hall in after deckhouse. Aft below are two double and three single staterooms, bathroom and two toilets. Has had careful upkeep. An excellent seaboat; remarkably economical to operate. Price low. Cox & Stevens, 25 Broadway, New York.



No. 4278—For Sale—Exceptionally desirable Lawley-built fast, twin-screw bridge deck cruiser; 56 ft. 8 in. long, 12 ft. beam, 3 ft. draft. Speed up to 24 miles; two 130/145 H. P. 6 cyl. Sterling motors, G-R type (new 1921). Electric lights. Hull double planked with mahogany; construction perfect. Roomy bridge deck; large cockpit aft. Unusual accommodation includes owner's double stateroom and toilet room forward; saloon with two berths, toilet room and galley aft; crew's quarters forward. One of the finest craft of its kind. Owner building larger; will sell at attractive price. Cox & Stevens, 25 Broadway, New York.

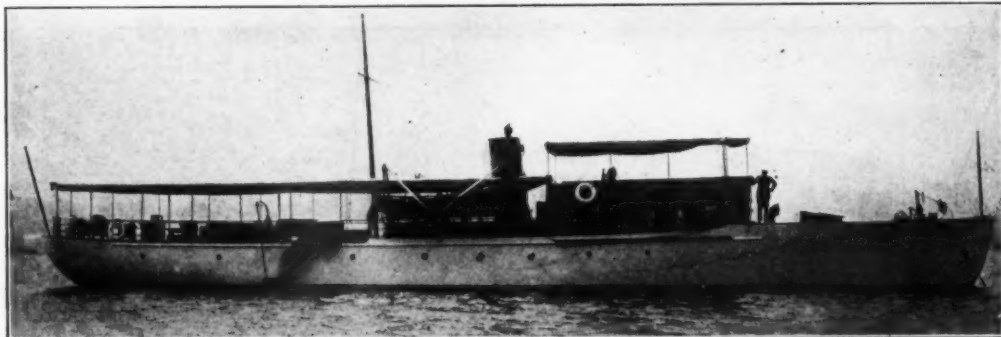


No. 154—For Sale or Charter—One of the handsomest steam yachts in the fleet; 131 x 17 x 6.6 ft. Speed up to 14 knots; triple expansion engine. Highest class construction; excellently kept up. All conveniences. Deck dining saloon forward; social hall in after deckhouse. Exceptional accommodation includes five staterooms, two bathrooms and additional toilet room. Handsomely finished above and below deck. Low figure will be accepted for quick sale. For plans, price, further particulars and inspection apply to Cox & Stevens, 25 Broadway, New York.

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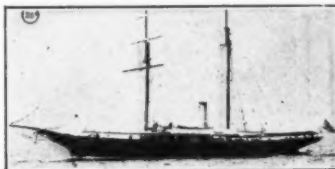
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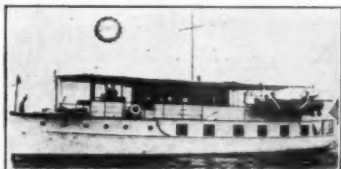
No. 1798—For Sale—Exceptional bargain. Able, fast, flush deck twin screw cruising power yacht, 105' x 15.5' x 4.9'. Speed 16-18 miles. Deck dining saloon, three staterooms, two bathrooms. Large deck room. Very low figure considered. Owner anxious to sell, having purchased larger yacht through us. Cox & Stevens, 25 Broadway, New York. Telephone: 2700 Whitehall.



No. 3529—For Sale—Handsome 60' bridge deck cruiser. Speed up to 14 miles; six cylinder 60-70 H.P. Standard motor, new 1920. Semi-enclosed bridge, one Pullman berth and transom in saloon, double stateroom, toilet room, galley, etc. Cox & Stevens, 25 Broadway, New York.



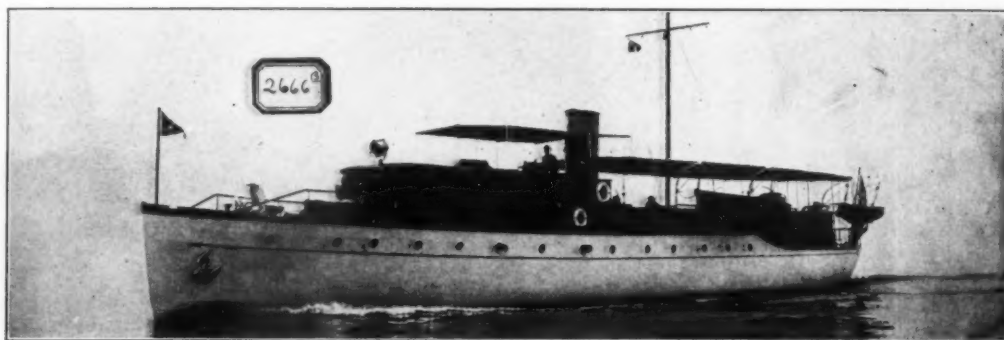
No. 26—For Sale—Genuine Bargain—Seagoing, steel steam yacht (barkentine rig); 144' overall, 126' waterline, 23' beam, 14' draft. Lloyds highest rating. Speed 9-10 knots; triple expansion engine. Six staterooms, two saloons. Remarkable deck space. Splendid seaboat. Reconditioned and modernized in 1919-20 at considerable cost. Rare opportunity to secure real bargain. Cox & Stevens, 25 Broadway, New York. Telephone: 2700 Whitehall.



No. 3957—For Sale or Charter—In commission. Up-to-date power houseboat, 60' x 16' x 3'. Speed 10-11 miles. 70-90 H.P. 6 cylinder Standard motor. Dining saloon, two double and one single staterooms, bathroom and two toilets below aft in addition to attractive deck saloon. Excellent boat for both Florida and Northern cruising. Handsomely furnished. Cox & Stevens, 25 Broadway, New York.



No. 3964—For Sale—Exceptionally able 42' trunk cabin cruiser. Heavy duty four cylinder, 37 H.P. Standard motor. Extra heavy construction. Good accommodation and large cockpit. Excellent condition. Bargain for quick sale. Further particulars from Cox & Stevens, 25 Broadway, New York City.



No. 2666—For Sale—Remarkably roomy, twin screw cruising power yacht, 100' x 16.8' x 4.6'. Economical to operate. Speed 10-11 miles. Two 60-70 H.P. 20th Century motors. Independent lighting plant. Splendid accommodation, includes deck dining saloon, large main saloon, five staterooms, bath and two toilets. Handsomely finished and furnished. Abundance of deck space. Low figure entertained for quick disposal. Cox & Stevens, 25 Broadway, New York. Telephone: 2700 Whitehall.

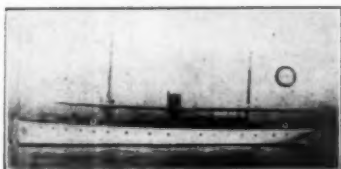
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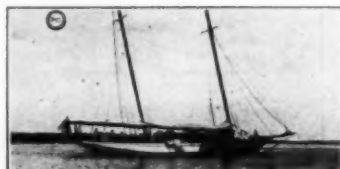
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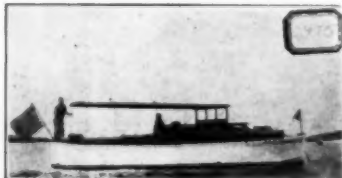
No. 3933—For Sale—High class, fast, twin screw cruiser, 60' x 11' x 3'. Built 1920. Best construction. Speed up to 25 miles. Two 200 H.P. Speedway motors. Dining saloon and galley forward. Double stateroom, shower bath and toilet room aft. Good crew quarters. Fine large after cockpit. Opportunity to secure especially fine craft of her type at attractive figure. Cox & Stevens, 25 Broadway, New York.



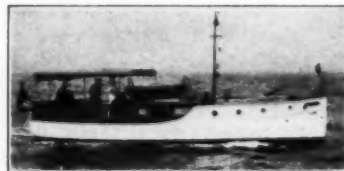
No. 2425—For Sale—Seagoing, twin screw motor yacht; 94' x 10' 0" x 4' 0". Construction extremely heavy. Speed 10-12 miles; large cruising radius. Remarkable deck space. Large main saloon and galley forward; exceptionally large owner's double stateroom aft with bathroom, and double guest's stateroom with separate toilet room. Low figure accepted for prompt sale. For full particulars apply to Cox & Stevens, Broadway, New York.



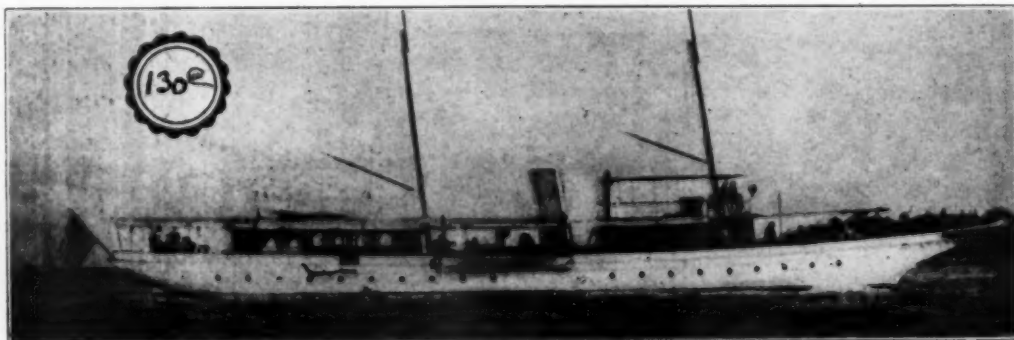
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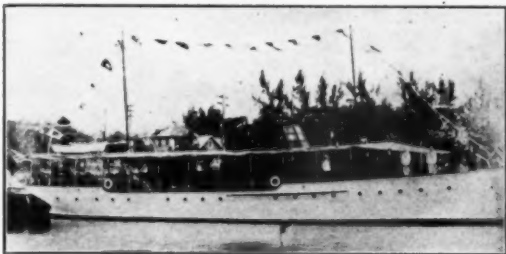
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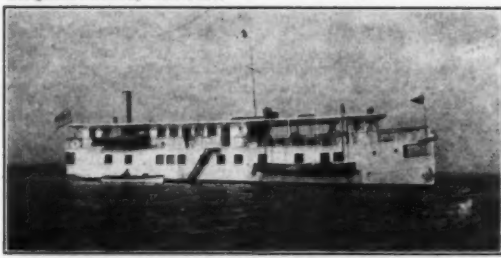
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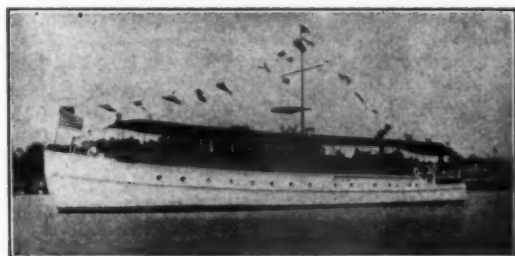
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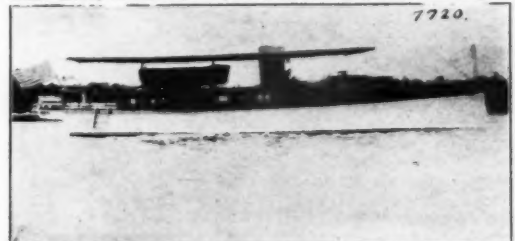
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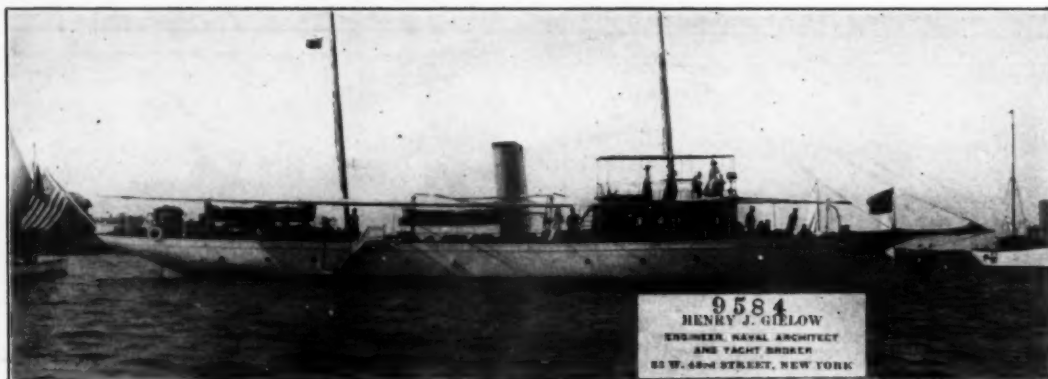
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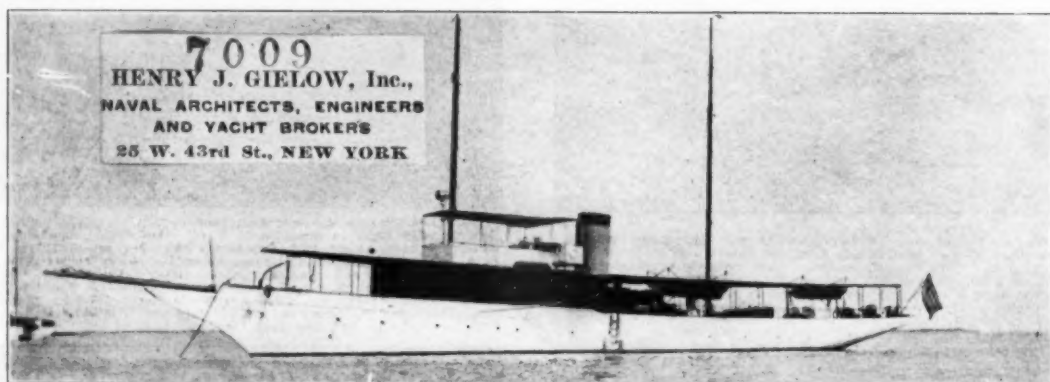
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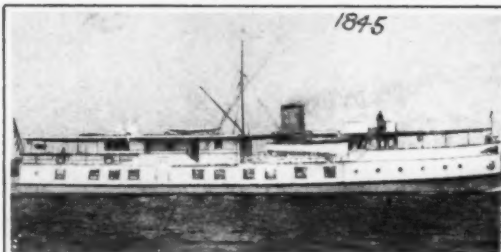
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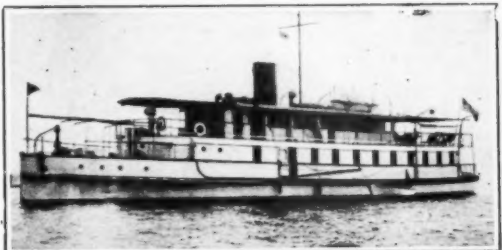
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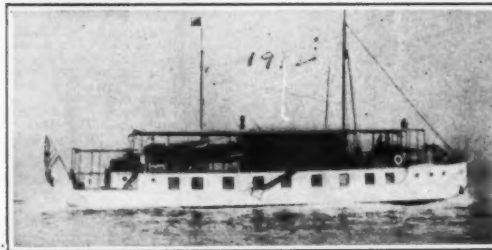
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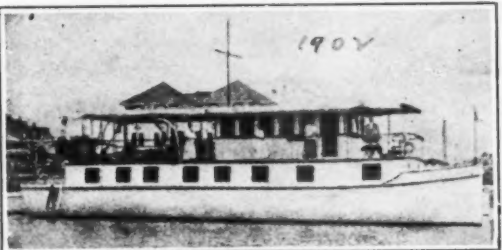
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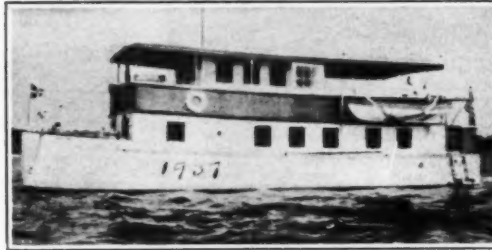
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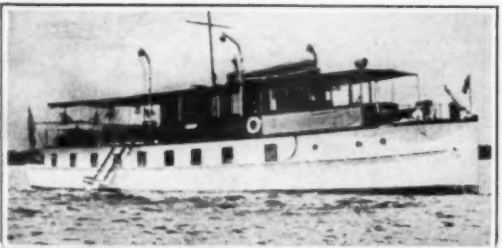
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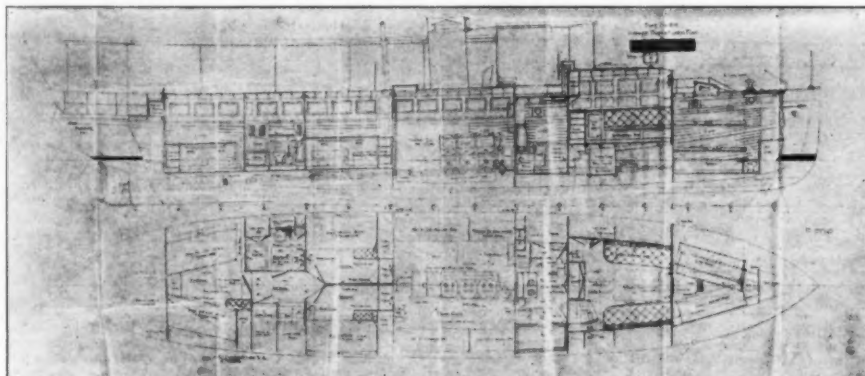
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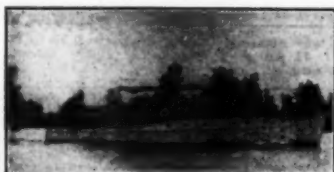
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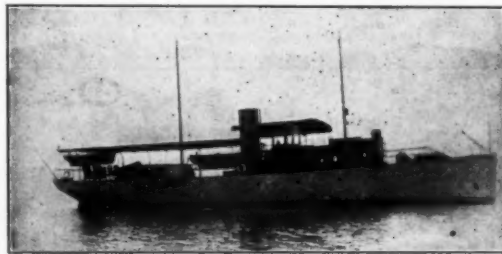
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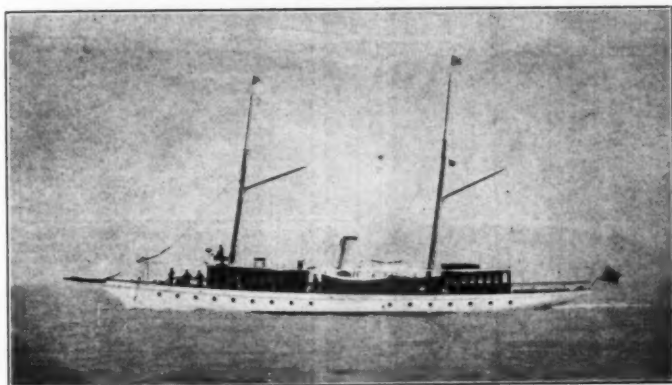
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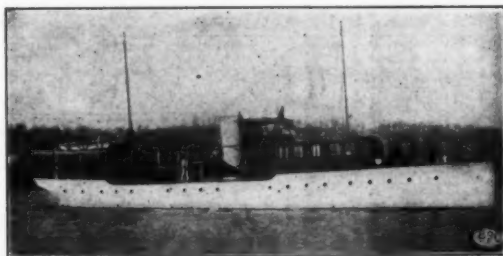
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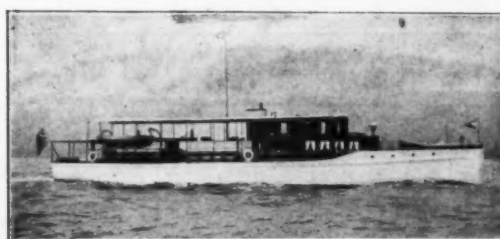
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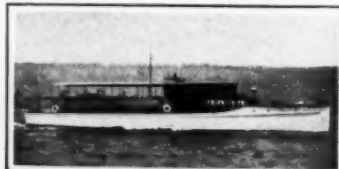
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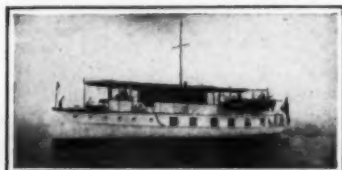
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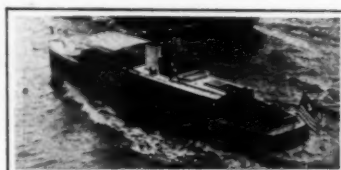
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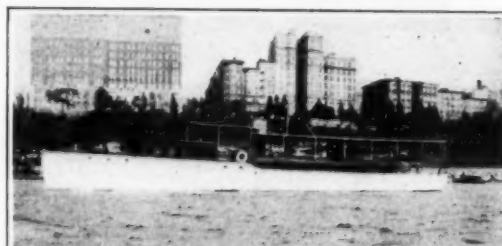
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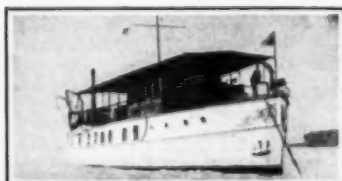
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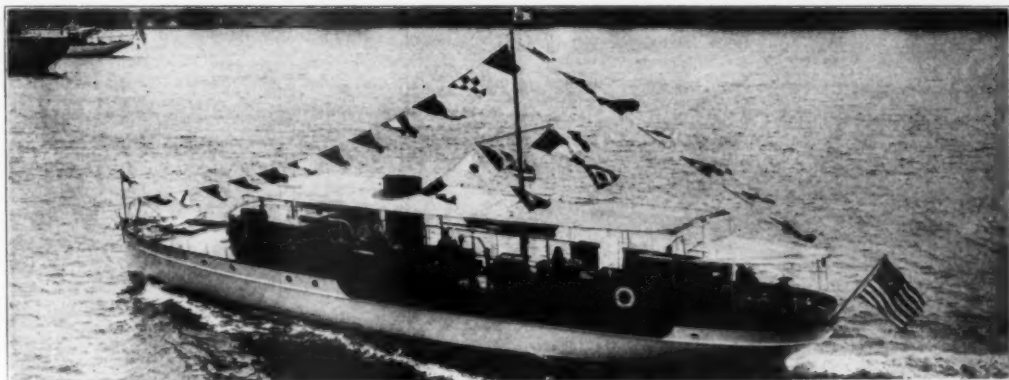
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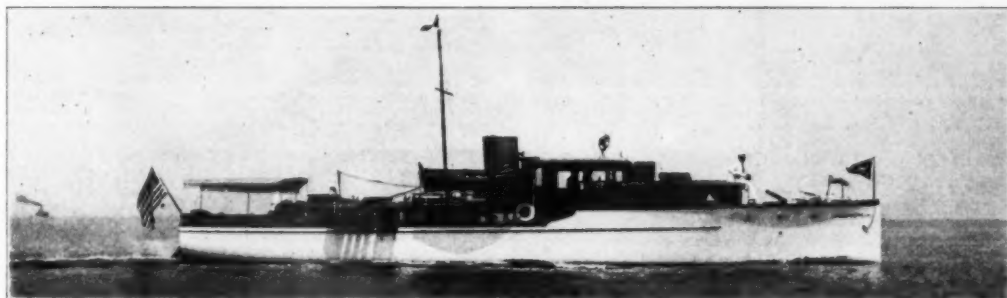
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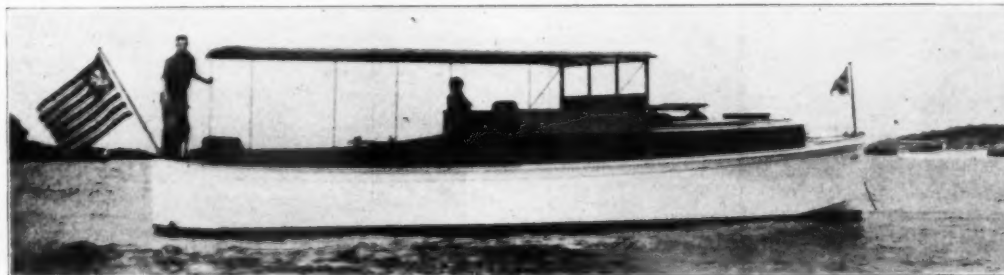
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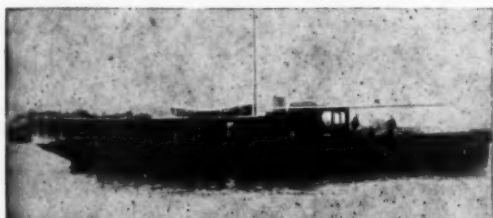
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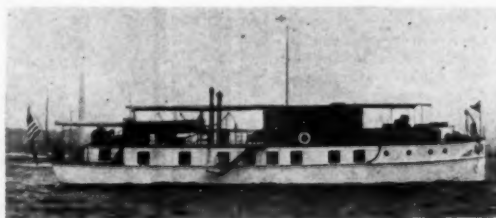
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No. 1949—Able raised deck cruiser, 62' x 12.9'; new 8 cylinder Sterling motor. Speed 13 1/4 miles. Single and double stateroom, main saloon, etc. In first class condition.



No. 2386—High grade express cruiser, 54' x 11.2'. Built 1917. Eight cylinder 200 H.P. motor. Speed 12-15 miles. Independent electric plant. Good cruising accommodation. First class condition.

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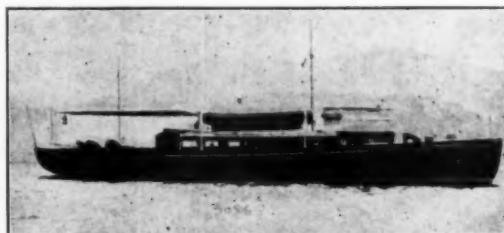
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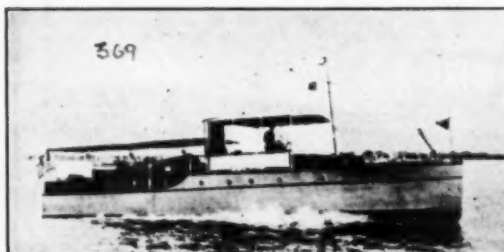
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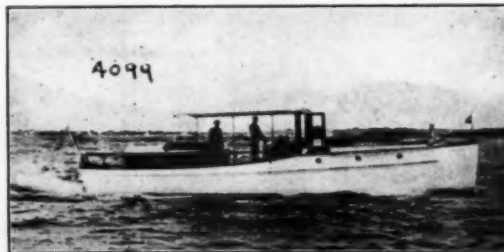
No. 338—For Sale—Hull only, motor removed. 32' x 14' x 4' 4" draft. Suitable for installing any kind of power. Heavily constructed. Inspection invited. R. M. Haddock, 50 East 42nd Street, New York City.



No. 3096—For Sale or Charter—Trunk cabin cruiser, 60' x 13' x 3' 6" draft. Sterling motor. Speed up to 14 M.P.H. Large after cockpit. Sleeping accommodations, 6 persons. R. M. Haddock, 50 East 42nd Street, New York City.



No. 369—For Sale—Twin screw bridge deck cruiser. 60' x 13' x 3" draft. Two Sterling motors. Sleep six. Speed up to 15 M.P.H. Price attractive. R. M. Haddock, 50 East 42nd St., New York City.



No. 4099—For Sale—Bridge deck cruiser. 47' x 10' x 3' draft. Sleep six. Speed 13 M.P.H. Heavily built and seaworthy. R. M. Haddock, 50 East 42nd St., New York City.

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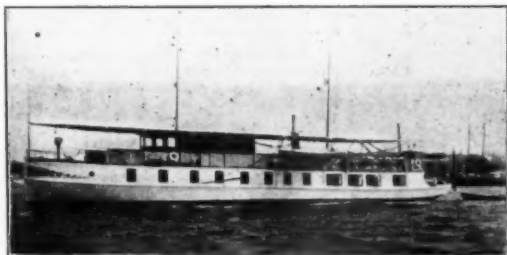
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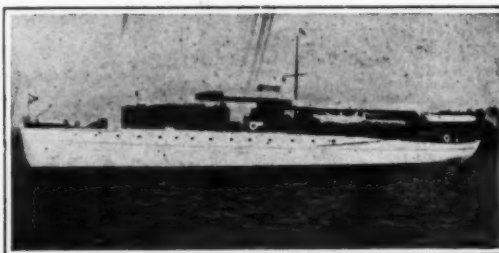
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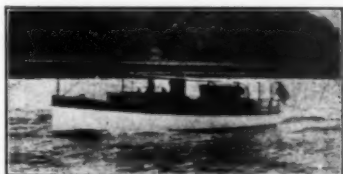
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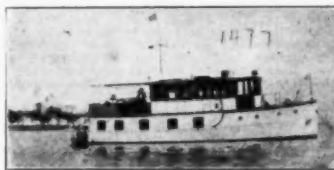
No. 1508—For Sale—Beautiful 95' twin screw houseboat. Three large double staterooms, two bathrooms, dining saloon. Heated throughout. Speed 11 miles. Sleeps 11 persons, besides crew's quarters. Excellent construction.



No. 759—For Sale—110' twin screw Diesel motor yacht. Three large staterooms, deck dining saloon, bathroom, etc. Thoroughly overhauled fall 1922. Wide cruising radius. Price very attractive.



No. 1295—For Sale—Most attractive 54' cruiser. One double stateroom and saloon. Speed 12 miles. The finest boat of her length afloat.



No. 1477—For Sale—Popular 52' power houseboat. Accommodations equivalent to three staterooms. Speed 11 miles. Best of condition.



No. 1450—For Sale—36' day cruiser. Speed 20 miles. Two berths in saloon. Built of mahogany in 1920. Excellent opportunity.

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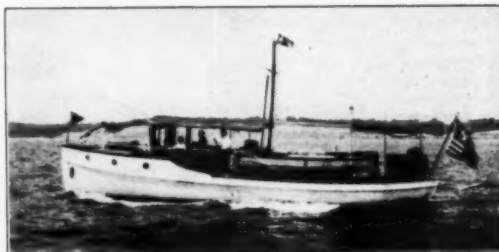
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Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR BoatingG.

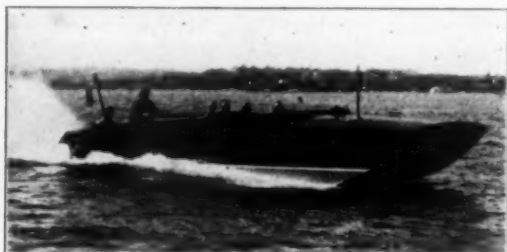


ROAMER III—New standardized express cruiser 54' x 11' built by the Great Lakes Boat Building Corp., delivered in June, 1922. Boat is mahogany planked. Equipped with two re-built 8 cylinder Van Blerck motors with Philbrin ignition. An opportunity to buy a new express cruiser at a reasonable price.

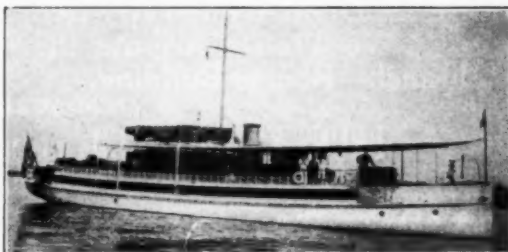
Earl Holley, Holley Carburetor Co., Detroit, Michigan.



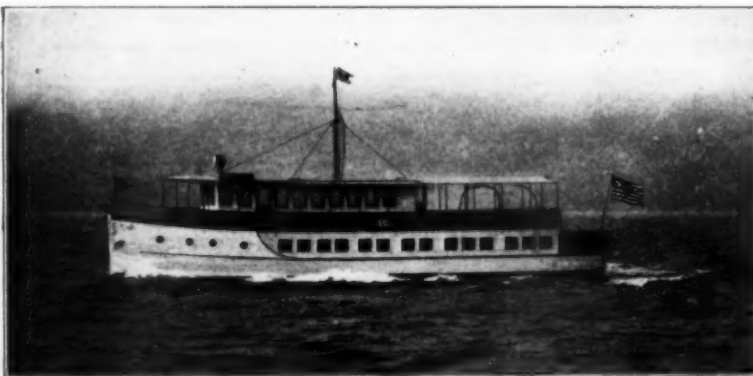
For Sale—Yacht Ojus, 45 x 11 x 3.6. 37 H.P. 4 cylinder Standard, 32 volt Matthews electric plant. The most luxurious craft on the Potomac River. Large gasoline, water and ice capacity. Very heavy construction. Large stateroom and toilet forward. Engine under bridge, saloon, galley and toilet aft. Completely equipped. Now in commission and ready to go anywhere. Absolutely in perfect condition. Price \$7,000. Address MoToR BoatingG, Box 53.



For Sale—Sea Sled "Marathon," 32 x 7 1/2, two cyl. 200 H. P. Hall-Scott motors, speed 47 miles. Boat and motors in first-class condition. Price \$8,000. Address Milton Crane, Manahawkin, New Jersey.



For Sale—Twin screw house boat now at the Thousand Islands. Length 90', beam 16' 10", draft 3' 8"; four double staterooms, bath, large saloon and dining room. Boilers have been recently retubed; very economical to operate; fully salt water fitted. Price \$8000 for a quick sale. For particulars address Geo. W. Mercier, Clayton, N. Y.



FOR SALE—High class 36 ft. Elco Express Boat with brand new 135 h.p. 6-cylinder Sterling engine. Speed about 22 miles per hour. Sell at \$3,000 complete, which is below cost of motor. H. O. Underhill, 32 St. Paul Place, Brooklyn, N. Y.

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Miss Mary, 26 x 5 1/4 foot, V bottom Runabout Hacker design, beautiful mahogany bright finish. Four cylinder Hall Scott motor, full equipment. Guaranteed 30 real miles per hour. Will do more. Used two seasons on Lake George, N. Y. Asking \$2500.00. Must sell this spring. Address owner, Jay A. Melish, 312 Riverside Drive, New York City.

One 4-cyl. 4-cycle 20 H.P. head Loew Victor marine engine. Medium duty. Built-in clutch. A bargain at \$175. Further information write Ray Van Blaricum, 523 E. Madison, Sandusky, Ohio.

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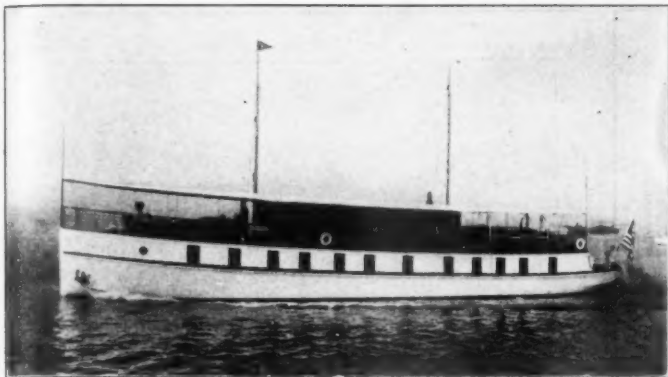
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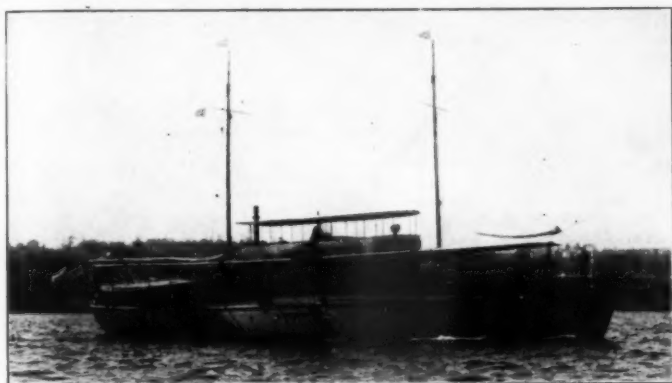
For Sale—New and rebuilt marine engines. Write for list of bargains. Anderson Engine Co., 4032 No. Rockwell St., Chicago, Ill.

WANTED—Runabout, 25 to 30 over all. Speed 15 miles. Address G. D. F., 22 Atkinson Street, Rochester, N. Y.

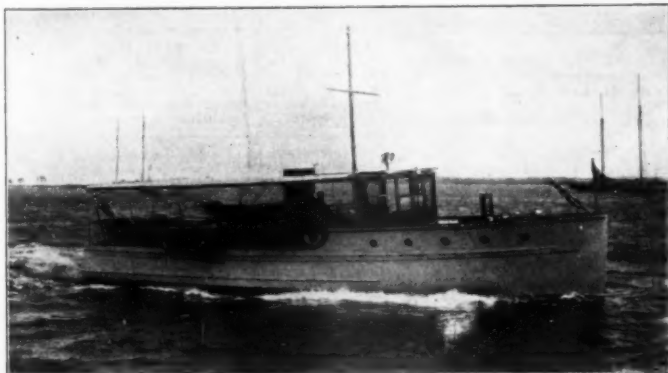
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No. 500—For Sale—First offering, 100' houseboat, reputation for being the most comfortable and seaworthy boat of its type. Speed 12 miles, new Winton machinery and lighting plant. Six staterooms, comfortable sleeping accommodations for 12 people, three bathrooms, large deckhouse. Now in commission in Florida. John H. Wells, 52 Vanderbilt Ave., New York. Phone: Vanderbilt 9307.



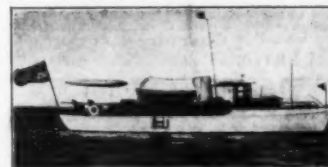
For Sale—Lounger II, 25 ft. cruising motor yacht, beam 17 ft., draft 4 ft. 6 in. Very heavy construction for offshore cruising. Speed 12 miles. Large deck house, bridge over, owner's quarters forward below deck, two double and two single staterooms, one owner's bath, one toilet, galley, motor room and crew's quarters aft. 220 H. P. Standard engine. Lighting plant, two Speedway mahogany tenders. Condition throughout first class. Owner building new yacht. Information furnished by John H. Wells, 52 Vanderbilt Ave., New York. Phone: Vanderbilt 9307.



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For Sale—Runabout, 24 x 5 1/2 ft., mahogany trim. 25-35 H.P. 4 cyl. Erd Motor. Automobile control. Speed 20 miles. First class condition. Harry W. Babcock, Stonington, Conn.

FOR SALE—Twenty-eight ft. V-bottom runabout, beam 6' 6", constructed on excellent lines with best material throughout. Planking cypress, bottom finished in bottom paint, sides white enamel, deck and interior paneling solid mahogany, natural wood finish. It is arranged with two cock-pits, with all controls and room for three passengers forward. Motor compartment midship large enough for 200 H.P. motor and rear cock-pit 10' long. This hull is complete with all fittings, including auto steering gear and forward control for reverse gear. Joes reverse gear capable of transmitting 200 H.P. at 1500 R.P.M. 1 1/4" chrome nickel propeller shaft, 20 x 30" Hyde propeller and heavy bronze strut, all installed ready to connect to motor. Bronze rudder connected with the steering wheel in operating condition. 75-gallon steel gasoline tank located under after deck. All deck fittings bronze nickel plated and all permanent seats, fitted with non-sinking cushions. Many other fittings, such as carburetors and magneto controls carried back to motor compartment are also complete. This hull with 200 H.P. motor has made better than 38 miles per hour, and is dry and seaworthy. This hull is now in storage at Lake Wawasee, Ind., and is offered for sale, complete, mounted on a shipping cradle. An exceptional bargain for \$1200. Inquire Box 56 Motor Boating.

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For Sale—13-15 H. P. heavy duty Buffalo engine, reverse gear, shaft and propeller. Will demonstrate on test block. Hague Machine Works, Norfolk, Va.

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ENGINE—Model 1921 Fay-Bowen, 6 cylinder, self-starter, generator, magneto. Motor new, only run 500 miles. In perfect condition. All fittings brass or copper. All tanks copper. Fuel consumption 1/4 gallon to a mile. Can be launched in 48 hours' time.

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Wisconsin

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Beautiful small Island for sale near Boothbay Harbor, Maine—about two acres—partially wooded. Furnished house. Wharf. Fine view, fishing, anchorage, boating. Low price. Ernest F. Merrow, 44 North Market Street, Boston. Telephone Richmond 1950.

FOR SALE—30 H.P. Kalenberg complete and as good as new. Also other small motors from 2 to 20 H.P. Jesiek Bros., Macatawa, Mich.

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FOR SALE—Three fast beautiful auto equipped runabout boats for sale; 27 x 5 ft. size; Mahogany material; Electric lights and self-starting.

RAY L. PARKER.

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New 8-cylinder V type motor, 200 H.P. at 2000 R.P.M. Weight app. 600 lbs. Direct drive with steel flywheel and reverse gear connection. Two 8-cylinder magnetos, starting magneto, etc. F. O. B. cars, \$375 cash. Heber H. Hunt, A. E., P. O. Box 1643, Washington, D. C.

WANTED—Sail Boat around 32'x11'x5' with motor, not racing model, condition sail gear not important. Motor Boating, Box 58.

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We guarantee that

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Sailing 50 Mile Boats Like Riding Wild Waves

(Continued from page 41)

cushion. We were bouncing up and down like kernels in a corn popper, sometimes thrown a bit sideways and nearly out of the cockpit, only to come down on the combing and slide into the seat in time for another bounce.

I tried to hold myself down in the seat by gripping the edge of a plank. Next bounce broke my grip and took some skin off my hands.

It seems as if Bernard and Jay Smith had thrown the throttles wide open as the spray blended into a mist, like the rushing fall at Niagara seen from the Cave of the Winds. It was flying through space, comet-like, with a roaring of wind and a whirl of stars as the boat came up and bumped me until my head was thrown back between my shoulder blades and my neck nearly snapped.

Sensation of speed! Riding with Barney Oldfield was a crawl compared to it!

And then, just as my head snapped forward with another yank as we struck a wave, I saw a huge, green slime-covered, half-waterlogged timber rolling heavily just at the surface of the wave dead ahead and only yards away!

Gar Wood saw it at the same time, I think. Our left arms shot out in a frantic signal to Chapman at the wheel, and as he yanked her over in response, Wood and I were hurled smashing against the starboard combing—nearly out of the boat.

Looking down I saw the big timber shoot past us no more than a foot away.

The one thing we were watching for nearly happened! If we had struck that timber at the speed we were travelling just then, heading on the homeward course after loafing around the island, Miss Detroit's bow-rudder struts would have been driven through her bottom like spikes through paper.

No place for a swim, even if our legs weren't smashed in the wreckage, for we were just above the rudder.

After that it was easy. We skidded out of the choppy sea in a few miles and ran along fairly smoothly. I had time to take an inventory of the skinned places where the combing caught me when I bounced, and to find that my neck wasn't dislocated. We saw no more logs. Just jogged along to the finish line at fifty miles an hour or so, and after crossing waited around half an hour until Joe Fellows came along in our wake with Fellows IV, a slower boat but sure, and the only other to finish.

Called Gar Wood up on the phone next day.

"Are you sore?" asked Gar.

"Aside from a broken neck, a few dislocated ribs and a yard of missing skin, I feel fine," I said. "Are you sore yourself?"

"You bet your life!" whooped Gar. "I stood up to breakfast this morning!" Saw Charles Chapman, helmsman, afterward.

"Are you sore?" I asked.

"What for?" asked Chapman. "Oh, you were up in the cockpit. I told you it was rough riding up there. Back where I was it was like riding in a Pullman. Didn't get bounced at all."

"Then you missed all the fun," I said. "Up there we were travelling close to three miles a minute: one up, one down and one ahead!"

(Copyright, 1923, by Robert Edgren.)

Advertising Index will be found on page 146

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Milano
Fifth Avenue's Favorite Pipe

"There is something fine about it"

\$3.50 and up at the better smoke shops

WM. DEMUTH & Co.
NEW YORK

Cruising in a Motor Sailer

(Continued from page 22)

outfit was hung on the stern. Protection to the hull is afforded by 1½-inch half round moulding faced with oval iron.

These motor sailers are noted for their sturdiness and seaworthy qualities, but not for speed, which for economy is about seven knots. Even when driven at that speed the stern has a tendency to squat, so to offset that to a certain extent 400 pounds of ballast were put in the bow, which after trials seems to have the desired effect. Little opportunity was had to put the boat through its paces, but on half throttle it does about 7½ knots. At full throttle the additional speed is not more than a knot more. Twenty horsepower is too much power for this boat, but experience has taught that a larger engine running at reduced speed is far better than running a smaller engine at top speed, even though the first cost is greater and operating expenses slightly more. An engine like the Kermath makes an ideal plant when installed in the cabin as this one is, as it is compact, quiet, and clean.

Repowered by HALL-SCOTT



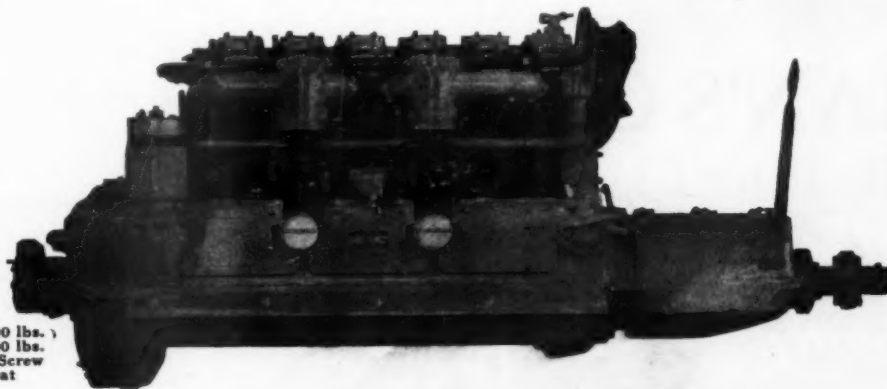
KINGFISHER, a fast V-bottom express cruiser owned by Albert H. Hayes of Los Angeles. Repowered with a pair of 6-cylinder 200 H.P. Hall-Scott Marine Engines. Speed, 24 m.p.h. Length, 56 ft. Beam, 11 ft. Displacement, 18 tons. Designed and built by Great Lakes Boat Building Corp., Milwaukee.

It is significant of Hall-Scott efficiency that so many fine boats are being repowered with Hall-Scott Marine Engines. Looking back over our sales records, we are surprised to note what a considerable proportion of all the Hall-Scott Engines we sell are purchased for the purpose of replacing other makes of engines.

Why do they choose Hall-Scotts? Ask the man who has invested several thousand dollars in a boat that has not come up to his expectations because its engines are unequal to their task. Next time he will not make a similar mistake—he will buy cautiously and demand the best.

Hall-Scott Marine Engines are built for the most strenuous service any type of marine engine is called upon to perform,—namely, driving fast runabouts and big husky cruisers at high speeds all day long. If you will take the trouble to study a Hall-Scott in actual operation, and look up the records they have made, you may be saved the expense of changing your power installation later.

Let us tell you about Hall-Scott powered boats that are similar to your own service requirements. Write today



4 Cyl. 125 H.P. 1100 lbs.
6 Cyl. 200 H.P. 1300 lbs.
Single and Twin Screw
Plants in stock at

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Factory: Berkeley, California

"Did I Marry a Man or a Business?"



AS he stood before the altar with Fay Gilman, George Judson devoutly sought to realize the minister's words that God had made himself and Fay into one in that hour. ¶ But a man and woman are two individuals and when Fay's love and George's business came into conflict, Fay could not help from crying: "Did I marry George or did I marry his Business?"

The Very Soul of America Is in this Great Novel

He Was a Self-made Man—George Judson was brought up in humble surroundings. At fourteen he was forced to leave school to support his family; at twenty-six he was the great financial wizard of the automobile industry. Business was his inspiration—his god. It came first, always—

She Was a Cultured Woman—Fay Gilman had beauty and brains. As a sweetheart she had found Judson a delightful playfellow. But as a husband he did not seem to understand her needs. So the day when his business was on the verge of failure, when he needed her most, when he longed for her comfort and sympathy—she was having tea at a Country Club.

MAN'S COUNTRY By Peter Clark Macfarlane

Illustrated by Charles D. Mitchell

A novel that is a challenge to every ambitious man. A challenge too, to every woman who holds home dear. It is **YOUR OWN DREAM STORY** put into a wonderful novel. Read "MAN'S COUNTRY" today.

\$2.00—At all Bookstores—\$2.00

Cosmopolitan Book Corporation

119 WEST FORTIETH STREET, NEW YORK.

Putting the Engine in Good Condition

(Continued from page 36)

and trying to work the piston up and down. If any jump or wobble is felt the bearing is loose and should be renewed by fitting new bushings or oversize pins as the case may be. This is a job for a garage or machine shop where they have reamers suited to the purpose.

Next remove the hand hole plates and adjust the main bearings so that you can just feel each one pull. Crankpin bearings if not badly worn are adjusted in the same manner by removing an equal number of shims from each side. Badly worn bearings should be replaced and if the crankshaft is rough or cut it should be trued and smoothed up by using fine valve grinding compound under the jig shown. Work the jig back and forth and across the shaft at the same time.

With all bearings refitted and adjusted, reassemble the parts. Don't neglect to replace all cotter pins and lock washers. Discard cotter pins, use new ones.

Care is necessary in replacing an en bloc cylinder casting over the pistons and it is often advisable to work from below.

The valves may be ground at any time but should not be permanently replaced except in a valve in the head motor, until the motor is assembled. Any shoulders on the valve face should be removed with a fine file, preferably in a lathe, or taken to a garage where they have a refacing tool. If the valve face is badly fitted or the head warped or the stem bent, fit new parts.

Badly worn valve stem guides should be renewed before grinding valves. Wobbly valves cannot long continue to seat properly and will always be noisy. The little rig shown makes it easy to draw out or replace a guide by turning the nut.

When assembling the motor replace any torn or damaged gaskets of the same material and thickness as the original, setting one side with shellac and the other with graphite grease so that breaking the joint without destroying the gasket is possible.

A satisfactory job depends upon the care with which the work is done and whether the parts are properly put back in their original place. There should be no small parts, nuts, bolts, or washers left when the job is finished and the motor should look and act like new.

W. B. M., Newburgh, N. Y.

Successful Correspondence Course Students

The names of all students who have successfully submitted papers for the Piloting Course, during the month of January are printed below:

Lesson No. 6 and 7: Andrew Dunlop.
Lesson No. 10: Andrew Dunlop, Arthur Peay, Roy E. Williams.

Lesson No. 11: Alfred Alexander, A. R. Burr, S. M. Bradley, John Lang, J. L. Saegmuller, T. S. T. Steinger, F. B. Watson, R. E. Williams.

Lesson No. 12: A. R. Burr, J. L. Saegmuller, R. E. Williams.

Lesson No. 13: Fred H. Campbell, Forest D. Greene, Jr.

The names of the students who have successfully passed lessons in Dead Reckoning Course during January will be published in the April issue.

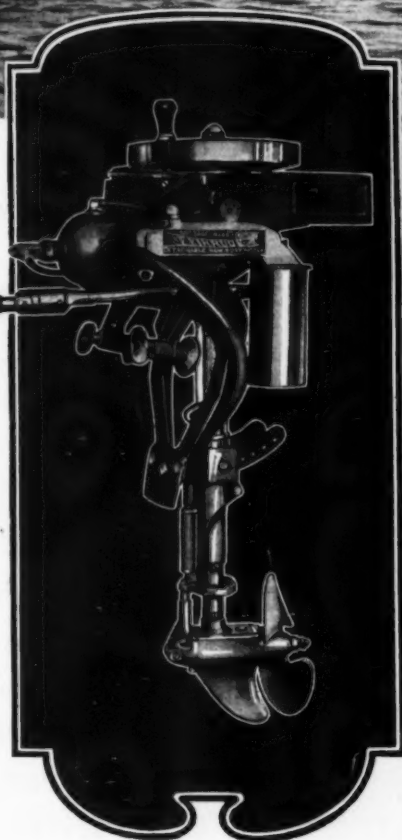


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Your boat, like those of the vast majority of "motorized sportsmen," will be powered this year with a genuine Evinrude, of course. Your fishing trips, picnics, camps and water jaunts will be free from oar-work—and from the whims of unreliable motors.

Evinrude now offers a complete line of small-boat motors. Evinrude Detachable Motors come in both single and twin-cylinder models, 2, 3½ and 4 H. P. For canoe "installation" there are the "built-in" Evinrude Inboard Motors—single and two-cylinder.

Now's the time to see your sporting goods or hardware dealer. Or write for free illustrated catalog—a regular hand-book of water motoring.



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129 Evinrude Block Milwaukee, Wis.

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A hot spark all the
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Philadelphia

Adventures With the Natives

(Continued from page 15)

placed before the rigid desks of learning. I lack that philanthropic spirit which demands that the children of primitive tribes be made as miserable as I was in the pursuit of knowledge.

Having completed the circuit of the island, we stopped before the thatched house of Mrs. Purdy, a white woman whose missionary work among the Indians is favorably known up and down the Isthmus. She answered our knock and, as soon as she had recovered from her surprise at seeing us strangers, asked us to supper. Jo and I had called with the avowed intention of refusing any invitation of the sort that might be extended, but Mrs. Purdy insisted and we finally capitulated on condition that she eat aboard Hippo on the following day.

Thus we had an opportunity to gossip and exchange what little news Jo and I had of the outside world for first-hand information concerning the methods of the Panamanians in the San Blas territory. Mrs. Purdy spoke in the guarded, whispered manner of one who has lived for years under surveillance; but by bending our heads over the supper table we learned that she is virtually a prisoner on the island and that she has been for some years the subject of official persecution.

Ten years ago she obtained a foothold for Christianity among the idol-worshipping Indians. Then the Panamanians assumed control of Nargana and she was informed by the governor that she must teach her Bible classes in Spanish. To conciliate those whom the Indians considered usurpers, she forthwith took up the study of the language and conducted bi-lingual classes. Subsequently, when a Spanish-speaking school teacher was brought to the island and regular classes in primary education were instituted, it was decreed that Mrs. Purdy could no longer hold her classes in the daytime.

By degrees, she was restricted in the evenings on which she might offer religious instruction, and now only Sunday evening is left open to her. But the Panamanians consider that instruction in modern dancing should be part of the curriculum of the simple savage. What, then, could be more fitting than that the Indians be ordered to dance to the strains of a phonograph right outside Mrs. Purdy's door? As this dancing lesson occurs Sunday evenings and as local police are stationed to keep tabs on those who have the temerity to enter Mrs. Purdy's house, the attendance at her classes has been reduced to nil.

The use of a canoe has been denied this earnest woman, and the Indians are forbidden under pain of punishment to bring her food or water. Nevertheless, so great is her hold on the affection of the people whom she has taught that she continues to exist and to defy what in her wholesouled faith she considers the Powers of Darkness. Under these circumstances—of which we had had a hint even before we left the Canal Zone—we were more than pleased to extend to Mrs. Purdy an invitation to accompany us up the Rio Diablo in the canoe which had been offered us by the Panamanian inspector. It would give her an opportunity to set foot off the island for the first time in weeks—and it might be a rather bitter pill for the inspector to swallow.

In fact, on the following morning, when I saw the inspector before embarking on this river expedition and asked him, somewhat hypocritically, if the inclusion of Mrs. Purdy in the party met with his approval, he looked as if a capsule of quinine had opened on his tongue. But he had his orders from Porvenir, and he replied that the outfit was mine to do what I wanted with it.

So, at about eight o'clock of that morning, Mrs. Purdy, Jo, and I seated ourselves in a cayuca, and two Indians paddled and poled us up the river which is the life-giving stream for the natives living at its mouth. Along its banks grow the coconuts (the currency of the Indians), the fruits, and the edible roots which furnish a large part of their diet, and from its fresh pools a few miles from the sea they scoop in gourds their drinking water. It furnishes a navigable route to the primitive jungle plantations in which the Indians grow their rice and bananas. It, with the other streams of the San Blas region, is the nucleus of the semi-civilization which has persisted without change for centuries.

About three miles from the mouth we drew up to a muddy bank. From here John, the one of the two Indians who knew a smattering of English, accompanied Jo and me to his plantation half a mile inland. The trail led over rotting logs and slippery vegetation to an open space where under the pitiless morning sun John's wife and mother were harvesting their rice. Standing beside a thatched lean-to under which sheafs of rice were gathered, John submitted to a photograph on condition that Jo appear also in the picture; and then, when we would have asked him about agricultural methods in the jungle he unburdened his heart on the all-absorbing topic—the domination of the Panamanians.

Among other subject peoples, notably in Tangiers in North-

(Continued on page 78)



The New Elco Showroom

Park Avenue and 46th St., New York

Elco BOATS ENGINES

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Standardization**

**First in
Service**

The new showroom of Elco Boats and Engines in New York. Located in the very heart of the hotel and shopping district. At this Permanent Motor Boat Show you can pick out your motor boat just as you buy your motor car, inspecting the finished product at your leisure before you decide.

ELCO Standardization Has Created Better Boats

ELCO Boats of 1923 are the product of 30 years of consistent devotion to standardization in boat building. Since the World's Fair of '93 where fifty-five of our launches dotted the lagoons, Elco has led the world in quantity production of fine power craft.

Everyone remembers the Elco achievement of building 550 eighty-foot Sub-chasers in 488 days for the British Admiralty in 1915. Only the experience of many years of standardized motor boat construction could have carried such a task to a successful conclusion.

Elco standardization has created better boats and better values. For example, the keels of fifty Cruisettes are laid down at once,—fifty duplicates of each part are made at the same time, reducing the cost of every operation. The savings are put into better materials, more careful workmanship and finish,—and the finished boat costs you less.

All experiments are eliminated in the thoroughly standardized boat. It is an assured success

before it is built. Improvements and refinements have been dictated by experience in actual service. Performance is a demonstrated fact.

The best proof of Elco values is to compare these standardized models directly with other boats, whether stock or special designs. No further argument is necessary when you have made such comparisons. To this end we urge you to visit our Bayonne plant and see Elco boats under construction.

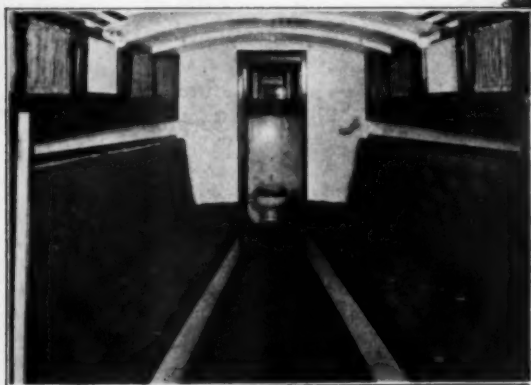
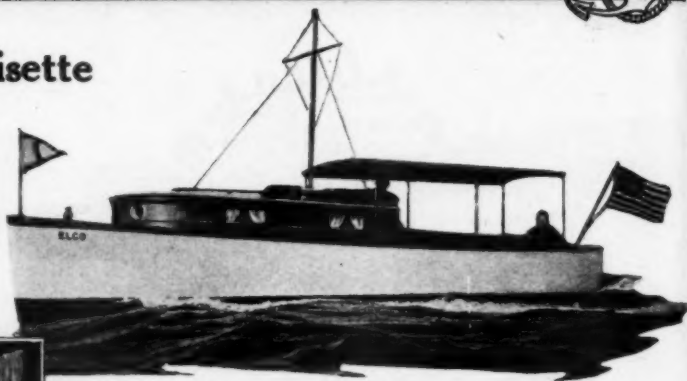
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Elco *The High Water Mark of Quality*

The Famous Cruisette

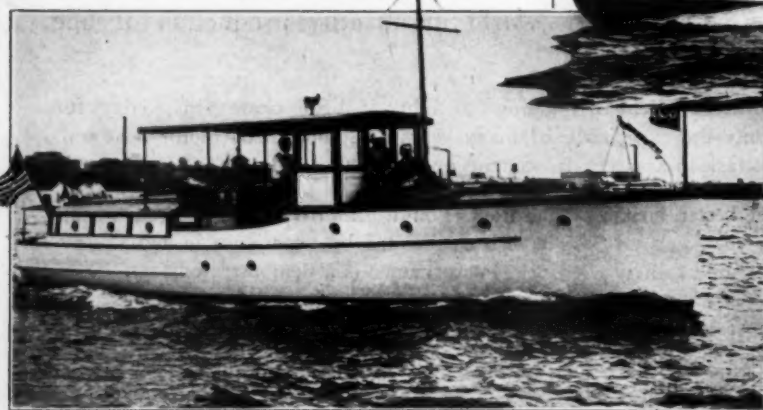
The most successful, most popular cruiser ever built. There are more Cruisettes in service than all other types combined. A roomy, comfortable, seaworthy 34-footer that lacks nothing in appointments or equipment. Sleeps six, complete galley, toilet, exceptionally large cockpit and a speed of 12 real miles.



You live with comfort in this cabin. Large windows make it light and airy. Every inch of space has been skilfully utilized. The seats have spring cushions and the backs swing up to form berths at night. No wonder Cruisette is the world's favorite cruiser.

The 30 Ft. Veedette

A 30 ft. Trunk Cabin Runabout for use in any body of water, combining protection in bad weather with toilet facilities. Large cockpit. Guaranteed speed, 15 miles.



40 Ft. Cruiser—Double Cabin

Has all the advantages of the Cruisette—combined with additional cruising facilities and separate owner's stateroom. Sleeps eight persons. Accommodates a larger party on day trips. Speed, 11½ miles.

Our ability to make deliveries of Elco standardized boats is always an agreeable surprise to Elco patrons, accustomed to ordinary boat building methods and delays. Frequently we are able to make delivery or shipment within 24 to 48 hours after the order is placed.

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Elco *The High Water Mark of Quality*

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A splendid big motor yacht that contains within its 56 feet the roominess and accommodations of a 70 footer. Two Elco engines drive this boat 12 miles an hour. Economical to purchase—economical to operate.

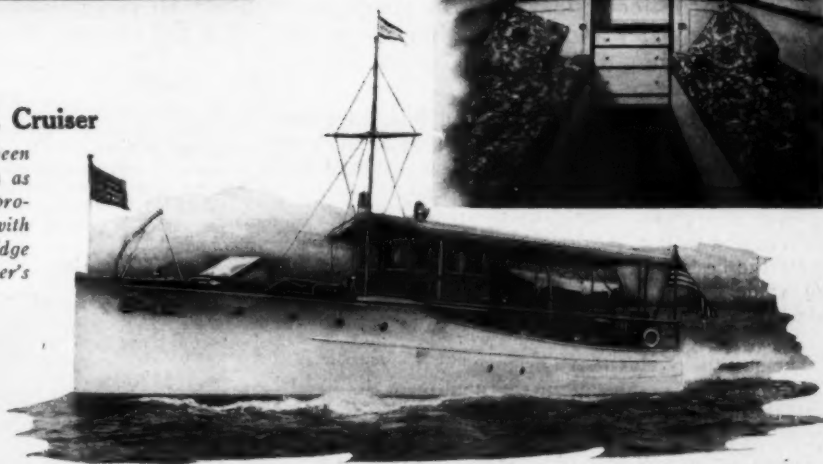


The 15 foot Deck House is easily the outstanding feature. It makes a real yacht, with its three staterooms, bath room, and crew in the fo'castle.



The New 45 Ft. Cruiser

The 45 ft. Elco Cruiser has long been considered by discerning yachtsmen as the finest "one-man" cruiser ever produced. This latest model is larger with more beam and the protected bridge approaches a deckhouse. The owner's stateroom is most luxurious.



And remember, every Elco boat is built under the constant supervision of an internationally known corps of experts. Every Elco boat is guaranteed against defects in materials, workmanship and operation.

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Elco SERVICE

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SERVICE is the golden link in the Elco chain. You can tie your Elco to our float any fall day, and take the next train home. We will haul it out, remove the dunnage, clean her, look over the power plant, remove the storage battery and store the boat under cover in a building protected with the sprinkler system. In the spring we replace all equipment, place the boat in the water and you take her away—all for a flat charge, about half the usual charge.

Only a big strong organization can do things the Elco way. Only big production can build such a smooth working organization. We have idealized the policy of giving good service economically.

From first to last, the Elco idea is for the man who wants the best but wants his money's worth in essential value. We spare nothing for mere economy's sake; we waste nothing in needless elaboration.

The success of this idea is shown by the size of the Elco plant and organization, the quality of its products, the number and character of its patrons.

Investigation will bear out this brief outline of Elco Boats and Elco methods. We hope to have the pleasure of entertaining you at our showroom and our plant. Distant customers are offered the best of service and attention to their inquiries.

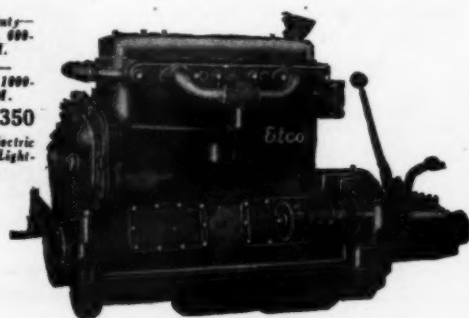
Elco Engines

Four years of experience with this engine have proved it worthy to bear the Elco name plate. We have installed thousands of marine engines, built engines in our shops and tried every prominent power plant on the market. In standardizing this Elco Engine for Elco boats and offering it for sale to yachtsmen in general we are satisfied it is the best power plant obtainable.

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28-47 H. P. 600.
1800 R. P. M.

High Speed—
48-57 H. P. 1000.
1400 R. P. M.

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Miami Beach to Havana Ocean Race for Express Cruisers

The Comision Nacional para el Fomento del Turismo of Havana, Cuba, in cooperation with the Havana Yacht Club, announces the offer of

Cash Prizes Totaling \$10,000

for a Free-for-All Express Cruiser Race from Miami Beach to Havana, Cuba

The race will be managed jointly by the Race Committees of the Havana Yacht Club, Havana, Cuba. Senor R. Posso, Chairman, and by the Miami Beach Yacht Club, Mr. Carl G. Fisher, Chairman. (American Power Boat Association Rules.)

The cash prizes will be distributed as follows:

First\$5,000 Second\$3,000 Third\$2,000

In addition to the above, suitable trophies will also be awarded

Scheduled Date of Race, March 3, 1923

Starting from Miami Beach, Fla., and finishing off Morro Castle, Havana Harbor, Cuba.

GENERAL CONDITIONS

- First:—This race is for motor boats of express cruiser type and there shall be not less than four contestants.
- Second:—It is required that the owner of each boat shall be on board during the race.
- Third:—The maximum time allowed is twelve (12) hours.
- Fourth:—The boats which take part in this race must also take part in the 75 mile race in front of the Havana City Littoral on the day following the Miami-Havana Race for which three trophies will be offered.
- Fifth:—The prizes donated by La Comision Nacional para el Fomento del Turismo will be as follows:—First Place \$5,000; Second Place \$3,000; Third Place \$2,000; in addition, three trophies will be donated by members of the Havana Yacht Club.
- Sixth:—The race is open not only to officially organized yacht clubs but also to private parties who in the judgment of the Comision are entitled to compete as amateurs.

Complete Information May be Had From Any of the Following:

Comision Nacional para el Fomento del Turismo

Dr. Santiago Verdeja, President
Dr. Carlos M. de la Cruz, Secretary
Havana, Num. 64, Havana, Cuba

Havana Yacht Club

R. Posso, Chairman of Race Committee
Playa de Marianao, Havana, Cuba

Carl G. Fisher, Miami
Beach, Fla.

Charles F. Chapman, 119 W.
40th St., New York, N. Y.

During the months of February and March, international sport contests of all kinds will take place at Havana, including racing, baseball, polo, track and field events.

Gar, Jr. II, passing historic Morro Castle at the entrance of Havana Harbor.



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CAPT. BENGTSON'S MESSAGE TO CAPTAINS

January 17th, 1923.

Capt. G. Lambert,
c/o Edward Smith & Co.,
127 West Avenue,
Long Island City, N.Y.

Dear Captain:-

I have noticed in your catalogs that you never mention what is perhaps the most remarkable thing about your Aquatite and Spar Coating, and that is that they never show the cracks and hair-lines which in all other varnishes that I have ever used, penetrate through to the wood so that each year the wood has to be scraped bare before these cracks and hair-lines can be removed.

Twelve years ago, having had this trouble on the "Idalia", I as usual had the wood scraped bare and began using your Varnish.

The Deck-houses and skylights have not been scraped from that day to this and the varnish shows no cracks or hair-lines whatsoever.

This means so much to boat owners that I thought you ought to let them know of the labor and expense they could save each year by not having to scrape the woodwork bare.

Signed - H. P. BENGTSON
Captain of the Steam Yacht "Idalia".

E.S.
1827
& CO.

Cup Defender Varnishes Yacht White and Enamels



EDWARD SMITH & COMPANY
129 West Avenue
Long Island City, N. Y.

Adventures With the Natives

(Continued from page 72)

ern Africa and along the Dalmatian coast, I have been asked why America did not intervene to relieve those who were or who fancied themselves oppressed. But this was not John's plea. "Why," he asked, "don't white people leave us alone? We poor but we were happy. Our land no good for bananas. No good for anybody but us. Can't we keep our country and white man keep his country?"

I could only shrug my shoulders in reply. It would do no good to tell him that the United Fruit Company, being forced by the gradual failure of its plantations in Costa Rica to seek virgin territory, believes that John's land is good for bananas and that one day not only the Panamanian but the American will dispute his occupation. John's unfettered, unlettered isolation is all behind him, and the jealous independence which the fire and the torture of the Spanish Inquisition could not break will be strangled in the tentacles of tomorrow's commerce.

So long did we stand talking about John's troubles—he digging his bare toes into the spongy soil of the path and Jo brushing sandflies from her ankles—that the other guide, who is in the employ of the Panamanian police, came looking for us. Mrs. Purdy, he told John, who translated for us, thought it would be well to inspect the Indian cemetery and return to Nargana before the sun had reached its noon-day warmth. So we followed the path back to the river, re-embarked, and continued up the shallow stream. At each turn the policeman's whistle was raised in warning, and we came upon Indian women, up early to wash their clothes in the river, and now concluding with a bath and swim. As we drew near they immersed their naked bodies and showed bashful, grinning faces from the far side of their canoes. However loath the small boys may be "to hide their nakedness," as Mrs. Purdy expressed it, the women have a modesty which needs no civilized tutelage.

Nor in their respect for the dead can we instruct them. The cemetery which we visited is situated in an open space near the left bank of the river, looked down upon by the inspiring mountains of the isthmian range, and sheltered from sun and rain by a large house of thatched coconut. The Indians bury their dead, and in the orderly arrangement of the graves this burial ground resembles many a New England cemetery. There was the difference, however, that instead of grassy mound, we saw each grave marked by an unkept depression.

Asking the meaning of this apparent neglect, we learned that the Indian goes to his final resting place lying in his hammock. The grave is dug, and the hammock suspended in it. Then the body is laid in the hammock and the hole is filled level with the ground. In time the hammock clews give way and the earthly remains of the sleeping Indian fall to the bottom of the grave, the soil caving in above them.

So earth becomes earth. But what of the Indian's spirit? We saw, scattered about the burial house, earthenware vessels, tobacco pipes, and sprays of wilted wildflowers; so we knew that the living had attended to the hypothetical needs of the dead. But, leading from the river to a recent grave, we had noticed a strand of string secured to the bushes, and crisscrossing over the path. The string was an enigma, and one which John seemingly could not and Mrs. Purdy in her righteous indignation against heathen superstition would not solve. It may have been a protection against evil spirits, but Jo and I like to think otherwise. In our opinion it was a leading string by which the departing soul of the water-loving Indian could find its way from grave to river, and thence out to the blue Caribbean, leaping and sparkling against the coral shore.

Our trip down the Diablo was made memorable by hot tea and home-made doughnuts prepared by Mrs. Purdy before the start, and was momentarily enlivened by a cat-fight in the jungle. Two wildcats, their enormous, black-ringed tails just discernible through the underbrush, exchanged uncomplimentary remarks and then rushed to vociferous combat. But John's shout lifted above the hubbub, and at the sound the two beasts separated and slunk off in opposite directions. I should like jungle life if I were sure that its denizens (including mosquitoes) would always depart at the sound of human voice, and if I could have in it as comfortable and mobile a home as Hippocampus.

Mrs. Purdy made good her promise to share our rations, and was duly impressed with the smallness of the boat and the largeness of our cruise. Just before she left we informed her that we never took a pilot and never went aground, and just after that we went aground and were glad to take a pilot.

This, our only grounding, happened as the majority of such things do—from carelessness. Starting from Nargana in the afternoon for an island called Rio Azucar, I left the chart in the cabin, thinking that I had memorized the course; and although I was watching carefully from the bow as the motor

(Continued on page 80)

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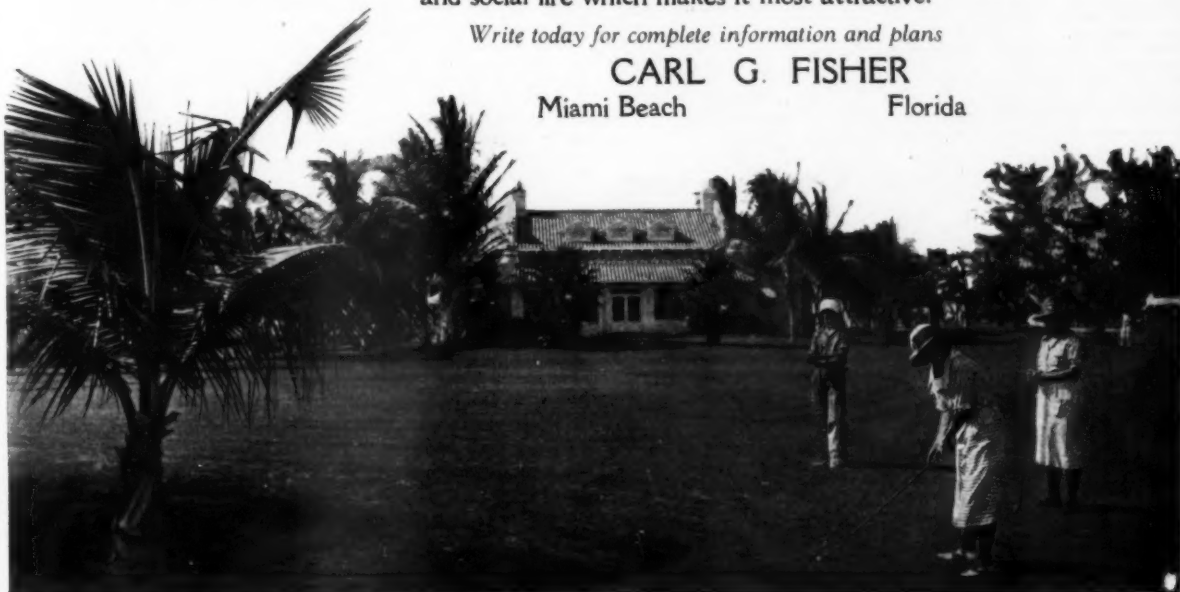
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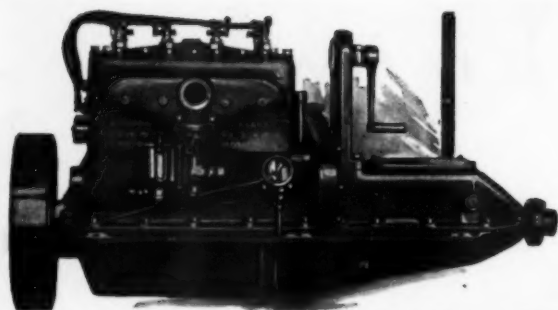
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Adventures With the Natives

(Continued from page 78)

pushed us along, the bottom came suddenly up to meet us, and we went on hard. But we had chosen the best possible place to take the land, for it wasn't five minutes before we had been boarded by seven Indians, all anxious to help and all most practical in their suggestions. They carried an anchor out astern, and while five of them pulled on the line, one stood on bottom and pushed the bow, and the seventh hopped up and down on the bowsprit.

My sympathy went out to the bare-footed man in the water, for there were sea-urchins with six-inch spines scattered liberally about the bottom, but my enthusiasm was all with the man on the bowsprit. He was a little fellow, weakened and white-haired, but I venture to say that never in his seventy-odd years had he enjoyed himself so much. He hung on the fore stay and pranced up and down, and shouted and laughed and put himself so much in the spirit of the thing that Jo and I were not at all surprised to see the Hippo quiver all over, teeter in indecision and then gather sternway for the slide into deep water. The motor, of course, had helped, but the hearty goodwill and powerful muscles of the seven Indians had most to do with it.

Once aloft, we weighed our kedge, got the motor going in the ahead direction and started for the channel. Seven pilots showed us the way, and, what seemed most remarkable to me, all showed us the same way. Ask seven amateur experts in Long Island Sound how to get into New Rochelle harbor, and how many will agree? But since these Indians were equals as pilots it was evident that they should receive equal pay, and I didn't see any way of dividing the highest wages I had to offer—six cans of Prince Albert tobacco—into seven parts.

Nevertheless, I passed out the tins and saw when noses had been counted that the little old bowsprit dancer had missed out. The others laughed delightedly when they saw the disappointed, rueful expression of his kind old face, but shouted in envy when I produced from my pocket a double square of cut plug and gave it to him. As for the old man, I am sure a handful of gold eagles could not have pleased him more. He shook hands rapidly, pulled up his cayuca which had been towing astern and embarked before anyone could so much as offer to exchange with him.

Before the others departed in their own canoes they advised us in broken English not to go to Rio Azucar because a *chicha* was taking place and there were "many drunken mans" on the island. We had heard of this celebration and were rather keen to see it, but when these men, who presumably spoke from experience, said that the Indians became wild and savage under the influence of fermented cane juice, we omitted Rio Azucar from our itinerary.

Nevertheless, it must have been a sight worth seeing. A *chicha* is a tribal holiday, with the Indian's god of Bacchus supreme on the island. At Carti we had seen the preparations for a *chicha*, at another island we had been informed that all the men were sobering up from one, and here at Azucar there was one going on in wildest abandon. There may be more excuses than one for such a festive day, but we knew from John that this affair was the marrying-off of one of the girls of the island. All her days from the time that she can first carry a younger sister on her hip until she is laid in her hammock in the grave, the Indian woman's life is one of drudgery. But on her marriage day much is made of her.

Her intended husband is selected by her father in agreement with the young man's father, and until the wedding she knows nothing of the choice. (That is, theoretically. But I suppose the secret gets out unofficially and that the young man also has an inkling of whom he is to wed.) Neither of them has any say in the matter, and the girl's father is anxious only that his daughter marry a man who will be a good worker, live in the paternal house and ease the old man's declining years.

So, when the old people have arranged the preliminaries and there is a good store of home-made liquor on hand, the unwitting groom is seized by his friends, carried to the house of the girl and dumped into the hammock in which she lies with a veil thrown across her face. This is part of the ceremony, ordained by custom, and it is also part of it that the young man shall get up in pretended terror and run as far away as the limits of the island will let him. Here is where the *chicha*, the word is used for the liquor as well as for the holiday, gets in its work, inducing the hilarity of the pursuit and the amusement of the onlookers. The man is caught, carried back to the girl, and again tossed into her hammock. Again he runs away, while the fun grows more boisterous and he is pursued with louder shouts and laughter.

On his second capture and return he lifts the veil of the young girl, seeing her face for the first time. This completes the nuptials so far as I understand them from the labored explanations of Indian and Panamanian, but no doubt the rest of the day is given over to dancing and carousing. On the fol-

(Continued on page 84)

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Adventures with the Natives

(Continued from page 80)

lowing morning, however, a ceremony which, perhaps, is considered in the light of sober ratification binds the marriage. For then, before day has broken, the young man comes from his father's house to the home of the girl's father and finds his bride, she is a young thing, of twelve or thirteen, sitting by a little fire removed from the rest of the family, a pot of coffee brewing on the coals. He drinks the coffee which she has made for him, and the head of the house welcomes him as his son—and servant. Contrary to custom among other primitive peoples, girls are more desired children than boys.

It is notable among the San Blas that their blood has been kept pure for centuries. Inter-marriage with whites or blacks is absolutely forbidden by tribal law, and the few errant women who have yielded to the blandishments of traders have at length succumbed to the assassin's knife. As a result of this policy and of the inbreeding which follows from it, there are many albinos among the Indians. But these uneducated people know enough about eugenics to forbid albinos of either sex to marry. There is tragedy in the plight of the albino girl who drudges from cradle to the grave without even one day of celebration in her behalf. The American sailor who rates a salute of one gun as his mortal remains go over the side to a deep sea burial fares better in the honors of this world than the San Blas albino girl.

Unable to see a *chicha* for ourselves, Jo and I sailed back in the direction of Porvenir, returning by a different route, and proceeding as well as an adverse wind would let us. As soon as the Indians had left us, we stopped the motor and hoisted sail; but it became evident as the sun sank that we should have to find a harbor along the way. This is not difficult in the San Blas gulf, for the outlying reefs fend the heavy Caribbean roll from the mainland and the islands lying off the river mouths. Hence, it was only necessary to estimate the remaining minutes of daylight and our distance from a likely-looking island, and make for it.

Drawing near in the last moments of twilight, we doused sail and started the motor, and as we did so we were boarded by two boys who had been paddling madly to intercept us. They spoke not a word of English except the compound "whereyou-gonow?" which they asked and reiterated with much laughter. But they showed us how to avoid the reefs and find a sheltered anchorage. They would have had us let go directly off the cluster of huts on the island, but we, seeing symptoms of a boarding party on the beach, bore on and put half a mile between us. Then at a spot which looked as open as Chesapeake Bay but which was in fact protected by a circle of coral reefs, we let go and furled up.

Thanks to our withdrawal from the settlement only one boat-load of visitors came aboard, and, after we had exchanged small presents of bead necklaces and bright ribbon, these left. Then by bribing the boys with plugs of tobacco carried along for just such purposes, we got rid of them, and were left to enjoy our supper in solitude.

Ashore we heard the plaintive notes of the Indians' pipes—their only musical instruments—which play no tune and reveal no knowledge of rhythm or harmonics. The sound is only that of a moulting bobolink which whistles two unpromising notes of his lovely song and endlessly repeats, forgetting the conclusion. But there were two pipes going, one in answer to the other, and as the sound was mellowed by distance and by the low rumble of the far-off surf, it made a pleasant accompaniment to the lapping of the water on the Hippo's sides and the music of the oscillating stars.

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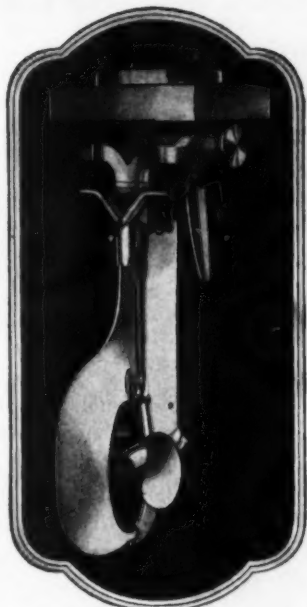
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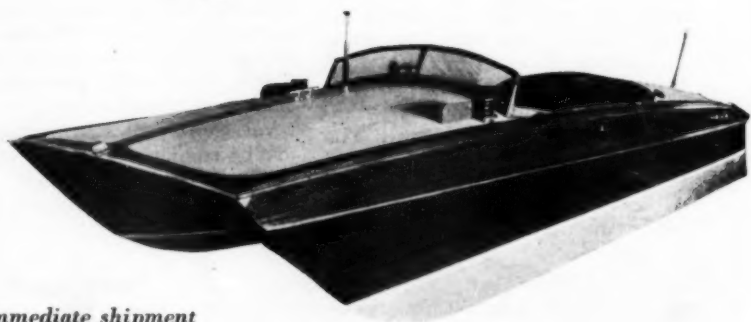
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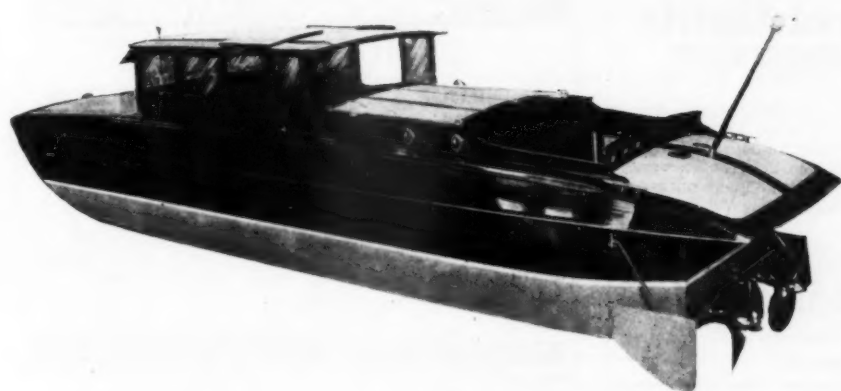
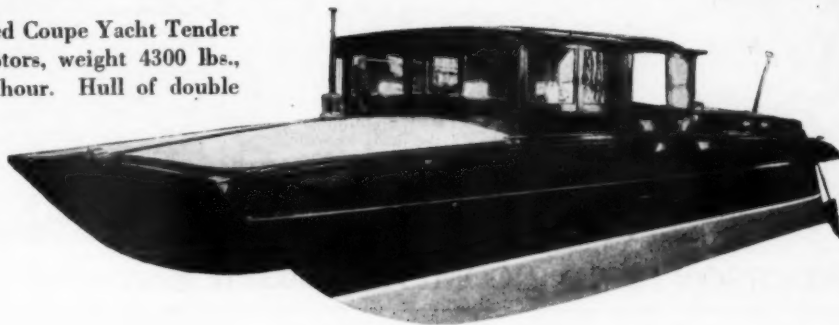
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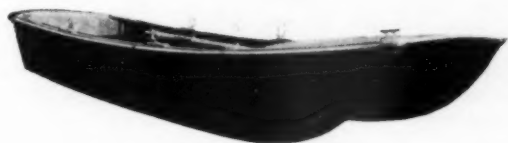
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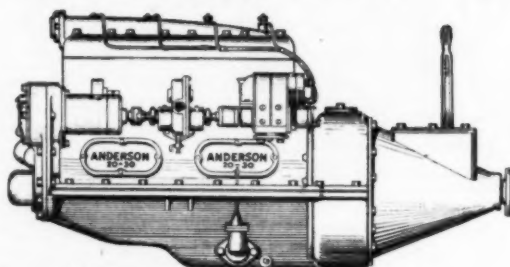
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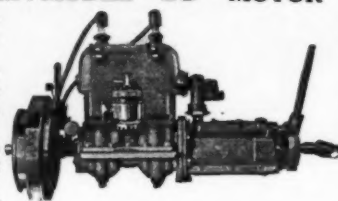
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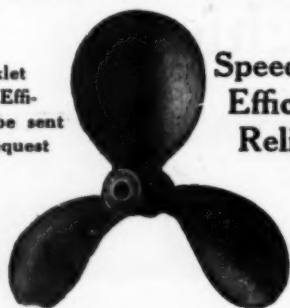


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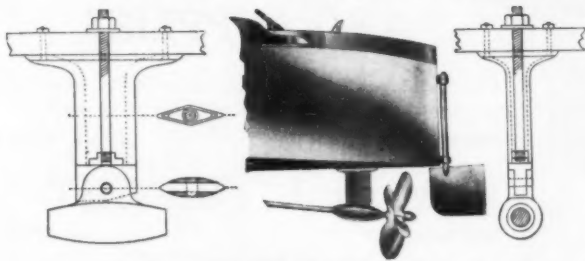
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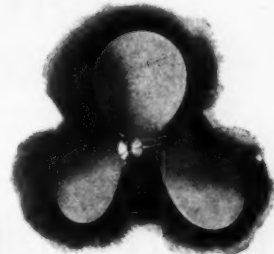
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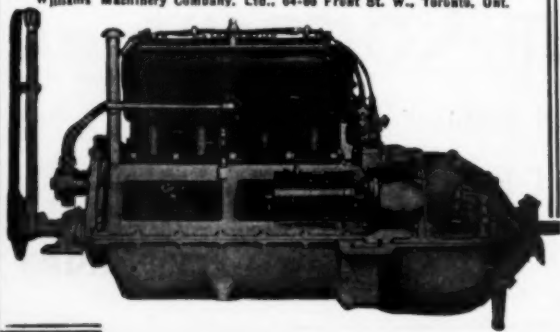
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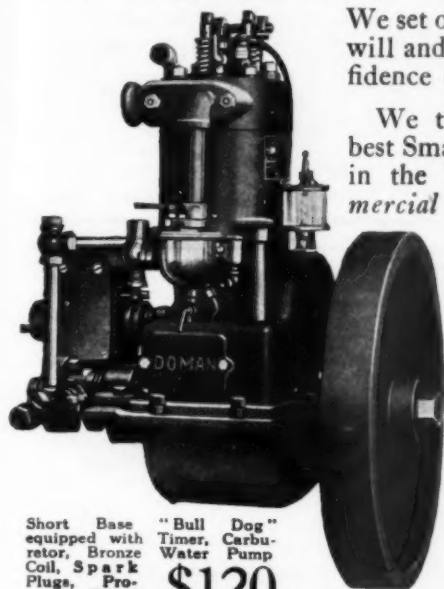


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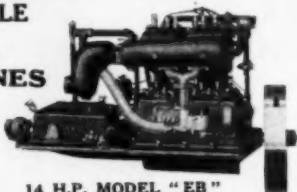
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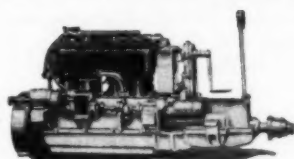
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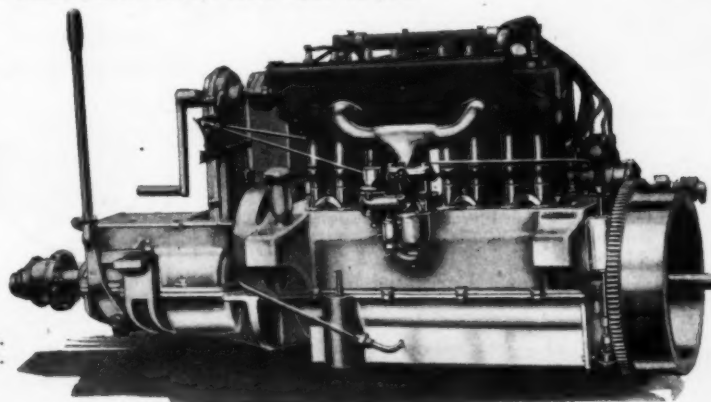
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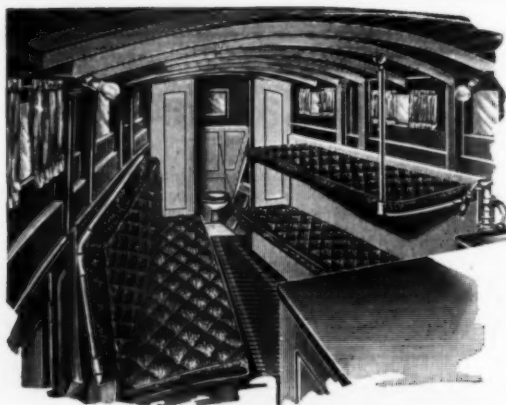
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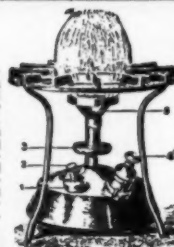
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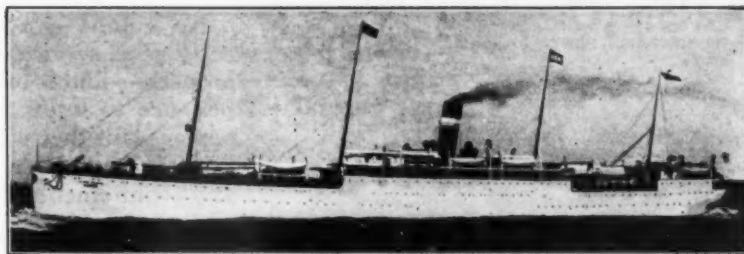


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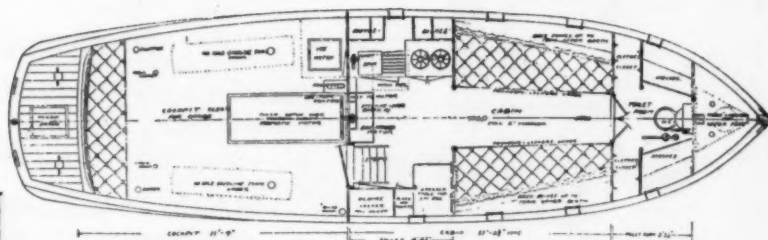
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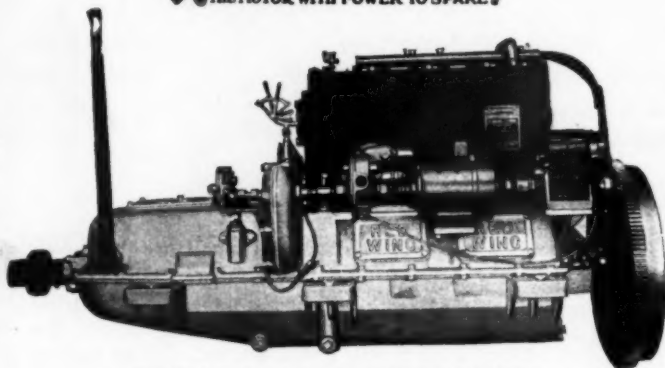


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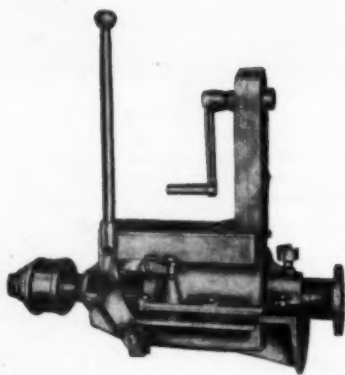
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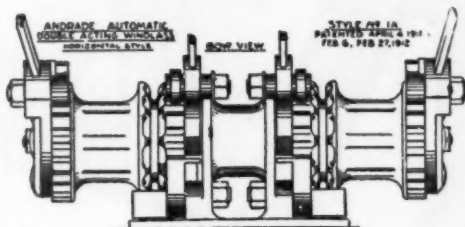
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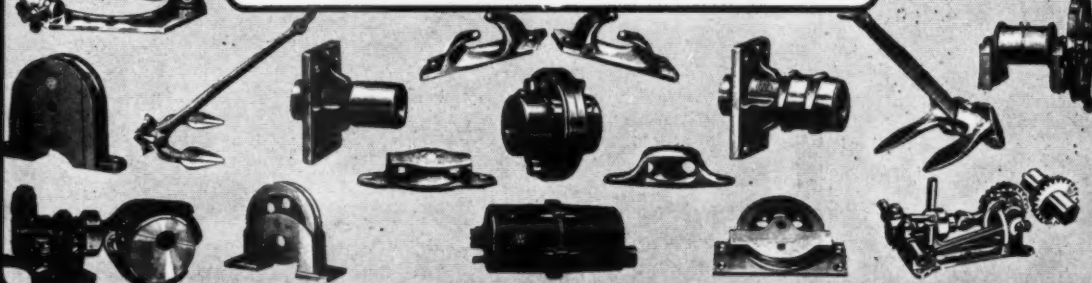
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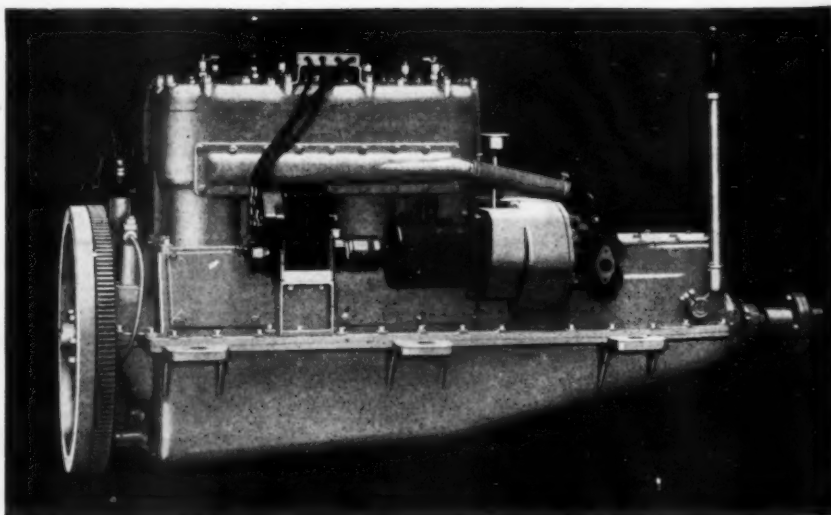
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De Luxe Model, mahogany finish, brass fittings. Practical Man's Model, oak finish, galvanized fittings. Powered with Fay & Bowen LN-41, 18 H.P., Speed 9-10 miles per hour. Powered with Fay & Bowen LN-42, 30 H.P., Speed 11-12 miles per hour.

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The boat you should plan to own for your outings. You will find it the ideal boat for fishing, hunting or picnicking.

Equipped with the wonderful Disappearing Propeller device, it carries you over sunken logs—snags—or rocks without injury to the propeller. Can be beached same as a rowboat. A single lever gives you complete control of this safe, family boat, making it easy for women and children to operate.



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WATERFORD
The Disappearing Propeller Boat

Copper Colored Masters of the Sea

(Continued from page 24)

bananas, breadfruit and taro for his afternoon meal.

The trip into the mountains, which are some eighteen hundred feet above sea level, was replete with scenery indescribable. The view of Pago Pago bay in the distance, with its palm lined shores, the white sails of the natives' Malagas, a boat to be later described, dotting the ocean here and there, and the wild lupe flying overhead against a mackerel sky presented a scene that would remain indelible in any one's mind. Mua located a tree and we set to work with our axe and adze and soon the tall senator crashed to the moss covered ground. The remainder of the day was spent in hollowing out the piece that we had cut off. I found our trouble had only commenced when we started to carry off our prize. The weight of the semi-hollowed log, together with the slippery moss under foot, made the job of hauling to the beach, most exasperating. After considerable grief and maneuvering we got the log into the bay and floated it down to Mua's abode. Several days were consumed in shaping the boat and attaching the outrigger. This is bound on with a braid woven from coconut hair, there being no nails used in its construction. Another month found me riding the breakers in true Samoan style, but not without its toll of spills on the needle-like reefs.

Shortly before my return to the United States, I took a trip to the island of Manua, which gave me an opportunity to judge the wonderful skill of the Samoans as boat builders. This island, some sixty miles distant from Tutuila, is exceedingly more primitive, due to its isolation from the white populated isles. Passage was made on the schooner Manua of twenty tons register, and a typical South Sea craft. A day and a half is consumed in the sixty mile trip with a brief stop at the islands of Ofu and Olosega. Great confusion was evident as we prepared to leave the wharf at Tutuila. Some seventy native passengers were aboard with three times that many relatives and friends on the pier, weeping and rubbing noses with those on board, which is the most affectionate caress in this part of the globe. The native crews were unreefing the main and fore-sails and the auxiliary engine was started which was to carry the craft out of the harbor and into the trades. We were soon standing out and the sails ordered aloft. The natives were beginning to settle down for the night, arranging their cedar chests, and other belongings.

The midship hold was filled with pigs, and represents the native's choicest food, and was to replenish the fast diminishing stock at Manua. The hatch cover had been removed as an air draft for the swine, and the squealing of these pigs together with the jabbering of the natives, promised a night of little sleep. A light wind was blowing from our port quarter and we were making little headway as I prepared to turn in for the night. The native helmsman, I noticed, steered his course by the stars and wind, seldom glancing toward the binnacle. The Captain informed me that this complement was made up of good helmsmen, they having all sailed these courses in their Malagas and pou-pous without the aid of navigating instruments or charts. They knew the lay of the reefs, which are the ultimate end of every trading schooner, and could enter almost any harbor without the help of a pilot.

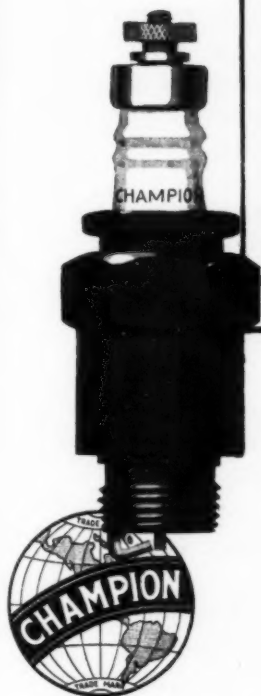
Morning showed the islands of Ofu and Olosega dead ahead, and about ten miles distant. These small islands are without navigable harbors, and we anchored off the end of the reef. Disorder reigned from stem to stern, as those natives to be landed at these islands, were looking for their belongings and getting them stacked along the gunnle. Hoisting a score of pigs from the hold added its share of clamor to the noise and confusion. The Captain became impatient as he saw that the few boats putting through the surf were insufficient to carry the passengers, luggage and pigs ashore in one trip, and this was going to cause considerable delay in our departure for Manua. The few Malagas and pou-pous pulled alongside and were filled with luggage, pigs, women and children. The gunnles of these small craft were awash with the heavy loads and with a half mile trip and the surf to conquer before them.

The Captain was highly incensed as we had now laid to for the most of an hour, and no outgoing craft was in sight to carry the ballance of the passengers ashore. The small boats had landed at the beach safely, and the natives were rubbing noses and standing in groups, forgetting about those still to come ashore. This view from the beach was the final straw for the Captain, and with a roar, shouted "Up Anchor," intermingled with other phrases that I decline to mention right now. The anchor winch on the foc'sle started groaning and this set off a general hullabaloo among the natives, and as the sails were ordered aloft, the natives hopped over the side, tossing over the remaining luggage. As we stood out and cleared the spot, I could not believe that we were going to leave the natives struggling in the water with their luggage,

(Continued on page 104)



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Copper Colored Masters of the Sea

(Continued from page 100)

and a half mile from shore. Several had started to swim for the beach, as I stood at the stern sheets, and the remainder were keeping their articles afloat, two of them supporting a five gallon can of kerosene above the surface. The boats were again putting out from the shore, seeing the predicament, and the skipper stated to me that this was a usual occurrence and was the best method to make them show a little life. "Time and tide waits for no man, and you can't drown a native," exclaimed the Captain, as their dark heads above the water were gradually lost to view.

The cone shaped peak of Manua was plainly visible, and we came to anchor off the edge of the reef at noon. Scores of native craft were putting out from the beach, there being plenty of Malagas for the freight and passengers. I induced a native to paddle my pou-pou ashore, which was then being lowered over the side, and climbed into the huskiest boat I could see, for my own passage ashore. We went through the surf, four bells and a jingle, and were greeted by hundreds of natives, and a naval doctor, stationed there by the government for the inhabitants' welfare. I took quarters with the doctor at the village of Tau, and from the front porch, watched the schooner stand out for Tutuila until it was a speck on the horizon, not to return for three months.

The doctor advised me to call on Tufele, the native governor of the island, and pay my respects. This I did with much ceremony on their part. Kava was made with its usual festivities and I was introduced to the island judge, other high chiefs, and the village policeman, a native of gigantic proportions, and to whom I immediately gave a plug of tobacco. I was accorded an invitation by Tufele for a fishing trip that night, leaving at sunset and returning at daybreak. I would much rather have declined the offer as my grips were still unpacked, and I could have made good use of a night's sleep, but did not believe it a very strategic move in enlisting the friendship of the natives. On my walk back from Tufele's large hut, no less than three hundred curious children trailed at our heels with a continued jabbering about the new white arrival. The policeman, Etula, by name, which means hour, caught sight of the parade following us and dashed up the sandy walk shouting and swinging his stick, the young ones dispersing amid cries of fear. The plug of tobacco I commenced to see, was not given in vain.

The men started provisioning their Malagas, Vaa-akus and Pou-pous for the night's trip. The Malaga is a diversified whaleboat, a double ender, built in various sizes and stepped for one or two sails. Some carry two oars and some are seen carrying as high as fifty oars. The larger boats are generally used in carrying every available man to a cricket game, and several of these large boats bear the entire population of a small village when travelling to another village for a Malaga, which when interpreted means outing and from which the craft receives its name. The limit in size of this type boat was reached when one carrying better than a hundred oars was built and broke its back on its maiden voyage. Some hundred natives were cast into the sea, but all reached the beach safely as is always the case with natives. The Vaa-aku is an outrigger of greater proportions than the pou-pou and is built to carry three men. It is used chiefly in fishing for aku (bonita).

We were soon through the breakers and heading for the end of the island just as the sun disappeared below the horizon. Our craft boasted ten oars, and as I sat in the stern with Tufele, I was never before so affected by the environment of these enchanting isles, as when I gazed at the gold rimmed clouds, the shadowed beach with their stalwart leaning cocoa palms, the foliage-clothed cliffs and hills, and the ten broad-shouldered natives, their oars rising and falling in perfect unison and concord with the peculiar melodies which they were chanting. The natives always sing when propelling a boat, and to stop them from singing, would interfere with their progress as much as taking away their oars.

Eight o'clock found us around the end of the island and lines over the side. Their fishing tackle is another product of this intellectual race. The hooks they make from abalone, and the line is woven from the hairs of the coconut. Most every advantage of the white race is enjoyed by these southerly people with little or no expense. Presently there was a commotion, and I learned that one of the men's hooks had fouled on the reef some six or seven fathoms below, which considerable tugging and maneuvering had failed to release. He would not lose the valuable hook and line, and making it fast to the boat he dove over the side. He pulled himself down to the reef and released the hook, coming up again with everything intact. This, I found later, was a frequent occurrence and much greater depths were traversed than on the occasion which I witnessed.

(Continued on page 108)



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Experienced motor boat men know the bother and the uncertainty of grease-cup lubrication. They are now using Alemite more and more to insure thorough lubrication of strut bearings, intermediate bearings, universal joints and many other parts. For example, Mr. P. K. Wrigley, of Chicago, owner of the swift 54-foot Great Lakes cruiser "Wasp," says: "With the Alemite System we can shoot fresh lubricant to the stuffing boxes in a jiffy. Alemite is by far the handiest and most effective method of lubrication we have ever seen. That's why we included it when we planned the new 'Wasp'."



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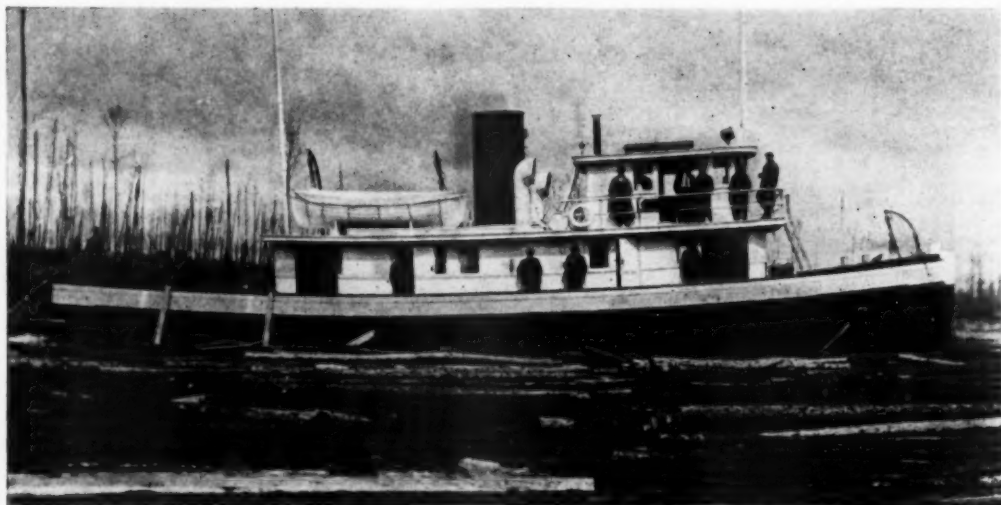
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One Boat That Does the Work of Four!

The "F. H. Anson" is an 83'x20' 6"x9'5" Tow Boat designed by Ralph E. Winslow, N. A., for the Abitibi Power & Paper Company for use on the Abitibi River in Canada towing booms of pulpwood.

Power plant consists of a six cylinder 350 H.P. Direct Reversible Winton Diesel Oil Engine and an auxiliary three cylinder Winton Air Compressor.

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doing the work formerly done by FOUR smaller steam tugs and, in her first six days of operation, delivered more logs into the booms than all four steamers together did in ten days.

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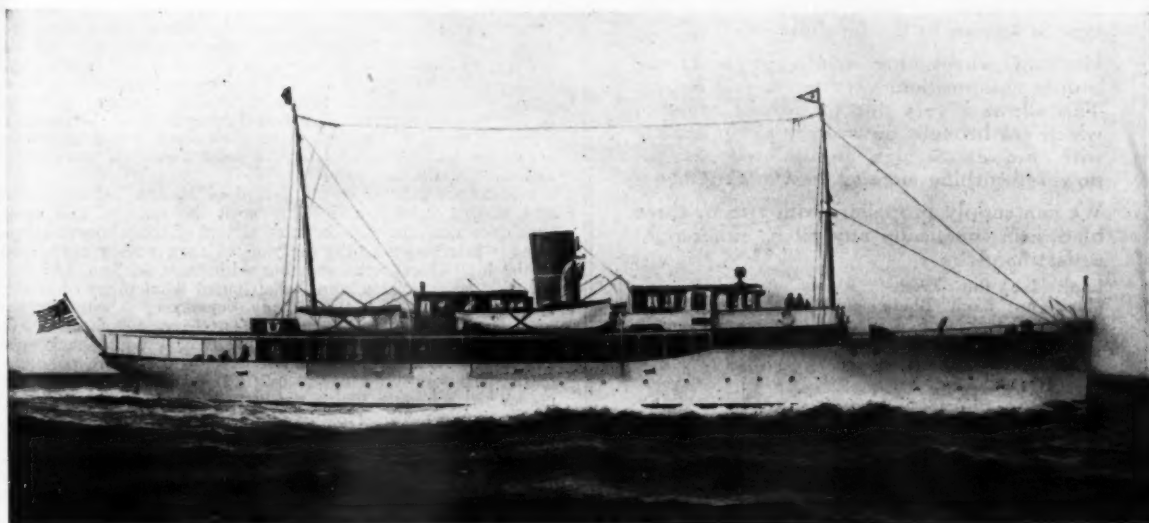
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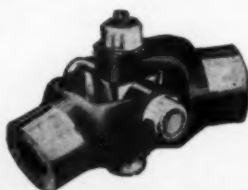
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**Blood-Brothers Joint is Durable,
Needs Little Attention,
Will Increase Available Power**

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BLOOD-BROTHERS MACHINE CO.

Allegan

Michigan

Copper Colored Masters of the Sea

(Continued from page 104)

A sufficient catch was made by three o'clock in the morning, but we must await dawn before venturing through the surf. Their lives are not taken into consideration, but upsetting in the surf would mean losing the result of our night's efforts and the possible smashing of the boat on the ever-present reef.

On another occasion I viewed a feat of the intrepid Samoan, and which again manifests their utter disregard of the dangerous lurking shark, and a display of their strength and mastery of the sea. Fish being one of the native's chief foods, is in most cases caught with the aid of their boats or gathered with nets in the surf, but these two herculean natives apparently owned neither as they walked out on the reef with a bamboo pole and line apiece. I noticed that they also carried a small box and to my astonishment they leaped into the surf and swam several hundred feet beyond. Their poles were then raised in the air, hooks baited from the box, and off they started, propelling themselves with their feet and holding aloft their poles with long lines. The box containing the bait floated on the water and was towed by one of the natives with a line running from the box and fastened about his neck. I watched them in amazement as their dark heads protruding above the water, passed around a point a mile or more distant and were finally lost to view.

I spent six months on the island of Manua, fishing, boating and playing cricket and living with the natives, and as the time drew near for the scheduled arrival of the schooner Manua, I made brief visits to the outlying villages, paying my respects to the high chiefs, who together with those in Tau, had made my visit so enjoyable, and I distributed what plugs of tobacco I had left. On the eve of my departure, I was the host of a fia-fia (feast) given me by Tufele, at which I received more gifts from the village people than I could pack away. The following morning found practically the entire population of the island arriving at Tau by trail and water for the incoming of the schooner which would bring many of their friends and relatives. Tappa cloths, fans, mats and numerous other presents to me still continued to arrive.

The Manua soon hove to and anchored off the reef. Scores of boats put through the surf and returned bearing the human freight ashore, and there was the usual rubbing of noses and other eccentric greetings. I was bound for Tutuila and my subsequent departure for the United States and as we stood out from Tau, I watched the natives until they were indiscernible and the white beach slipped below the horizon, and in a few days was leaving Tutuila and the kindest, most amiable people and the finest boatmen and swimmers in the South Pacific, the Samoans.

Dolores, A Cruising Knockabout

(Continued from page 32)

Double block on port side and single block on starboard. Chain plates to be Tobin bronze, 1½ by ¾ by 24 inches, bolted to inside of planking, fitted with an oak backing frame extending below bilge stringer. Runner plates same as main chain plates. Mainsheet traveller, ½-inch galvanized iron, bolted to inside face of transom. Jibsheet traveller, ½-inch galvanized iron, 18 inches long located as shown on plans.

Sails: To be made of 6 ounce yacht duck by a first class sailmaker as per dimensions given on sail plan. Mainsail to have slides sewn on hoist and foot to fit ¾-inch track. Jib to have snaphooks, foot to lace to boom. Waterproof sail cover for mainsail and necessary number of sail stops.

Machinery: Auxiliary motor to be furnished by owner and installed by the builder, located as shown on plans, under bridge deck. Engine foundation to consist of two fore and aft bed pieces of oak fitted over floor frames and thoroughly bolted in place. Details of foundation to be made to suit engine. Shaft hole to be fitted with a lead sleeve, flanged at both ends and made watertight. Inboard stuffing box to consist of a metal shaft log fitting of suitable size with stuffing box on inboard end. Outboard bearing to be a plain bearing bolted to aft end of shaft log. Gasoline tank to be a cylindrical galvanized tank 12 by 30 inches installed under the cockpit floor and securely chocked in place. Filler pipe to be fitted to plate in cockpit floor. All details of piping and engine installation to be made to suit engine selected and to be as directed by owner.

Equipment: One galvanized kedge anchor with folding stock, about 35 pounds; 150 feet of ¾-inch diameter manila rope line for anchor. One brass bilge pump fitted with rubber hose on discharge. Two kapoc filled cushions for cabin transoms. One boat hook with 8-foot handle. Two cork jacket life preservers. One 3-inch boat compass. One fog horn, one lead and line, one set of sailing lights and anchor light, one fire extinguisher.



New AT Type Magneto

YOU'LL grow enthusiastic about this instrument the moment you see it—

Simple, rugged, compact, dependable—
new in design and wonderfully efficient in
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Doubly protected against water and oil—
cleverly designed, accurately built and beauti-
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Your boat and your pleasure is deserving of a better motor, one on which you can place the utmost dependence.

You not only get dependable service, but you get in a Gray, a smooth, quiet, clean, operating motor that tends to give you that pleasant feeling of relaxation, you seek.

In small cruisers up to 35 feet—Runabouts 20 to 30 feet and work boats the Gray 4 cylinder valve-in-head has given their owners better Economy and more speed than any other type of the same bore and stroke.

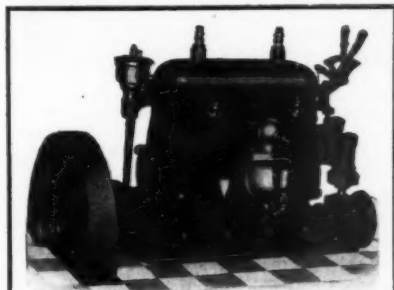
We don't ask you to rely entirely upon our statement but will gladly put you in touch with these owners.

What Engine of equal cylinder displacement do you know of that will turn a 14" dia. x 20" Pitch Hyde type Wheel constantly 1650 revolutions, or a 20" dia. Hyde Wheel, 900 revolutions.

Note the rigid one-piece base with Reverse Gear enclosed. The gear is automatically lubricated with positive gear pump that lubricates all other internal working parts of the engine—no grease cups or thick transmission oil used.



Neat, compact, every moving part enclosed, you'll find the 1923 Gray as handsome and as efficient as any motor of its size ever built, regardless of price.



One of our most popular selling engines is the 2 cylinder 6 to 8 H. P. A most powerful and durable one, occupying less space for the power developed than any other, that we know of.

Its easy starting, and dependable operation coupled with its wonderful economy, recommends it to those who are considering a motor for a pleasure boat 16 ft. to 24 ft. or for a fish or work boat up to 20 ft. requiring 6 to 8 H. P. For auxiliary power in sailing boats up to 35 ft. this little engine is a great favorite.

Oil filler is conveniently located on top of the engine with duct leading to Crank Case. Rocker arm shaft is hollow and automatically supplies oil to Rocker Arms. Oil is forced under pressure to the three main bearings, and to the connecting rod troughs.

In brief, the Gray Oiling System leaves nothing to chance. It is un-failing at all engine speeds, and all oil is kept inside the engine, and not thrown around the boat or on its occupants.

Due to the special design of the Cam Shaft, push rods and rocker arms, scarcely a sound can be heard with the ear close to the engine.

The smooth, quiet operation of the new Gray improved Valve-in-Head at all speeds from 200 to 2000 would compare favorably to an electric motor. It runs most economically on low grade gasoline and satisfactorily on kerosene.

Note The Big Crankshaft

The diameter of the main bearings are: Front 2 1/8". Center 2 1/16". Rear 2". The lengths are 3 3/4", 2 1/4", 2 1/4" respectively. Crankshaft is 40-50 point carbon steel forging, heat treated and ground.

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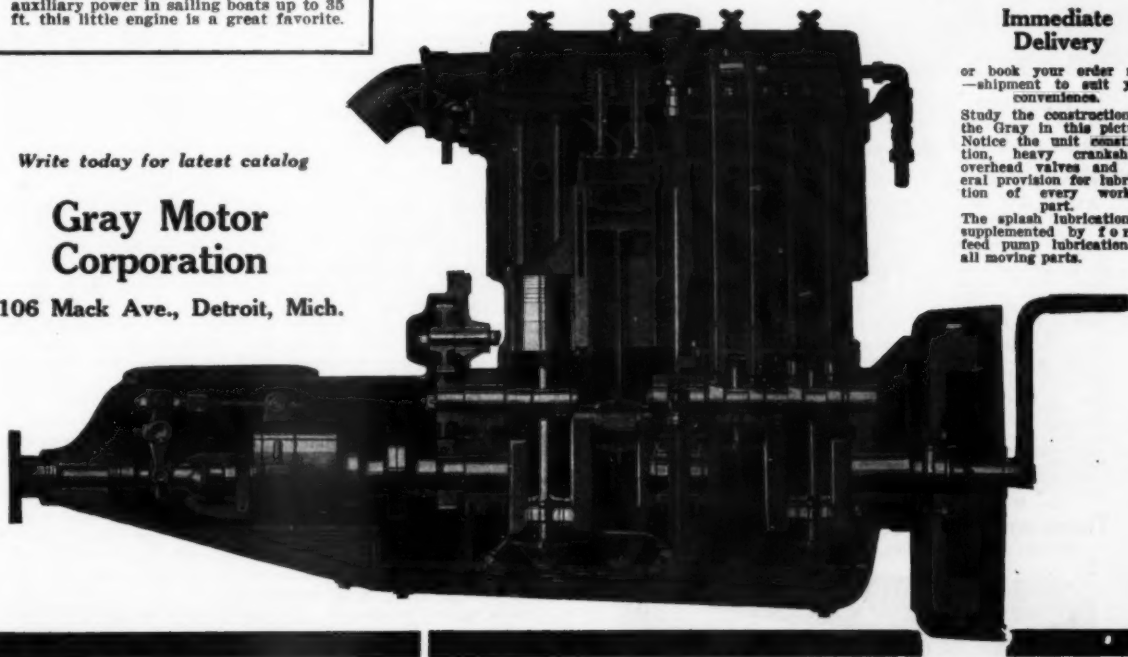
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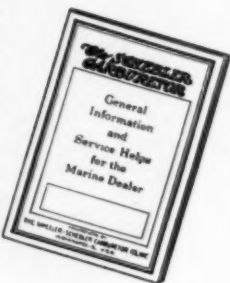
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Heart
of the
Motor

Get This Book

It tells all about how to install, adjust and repair all types of marine carburetors. Shows many short cuts in tearing down and assembling. Every dealer and marine service station needs it. In writing for the Schebler service agreement. It means more money to you. Address Dept. P.



More Power to Your Engine

The Schebler Carburetor has been the recognized standard for 20 years on marine motors. Used by seventy manufacturers on craft ranging from small outboard boats to high duty speed boats. It meets every need of power, speed, economy and endurance.

Write for our sales plan for 1923.
Big profits to you.

Wheeler-Schebler Carburetor Co.
Indianapolis, Ind.



Thompson's BEACH "The Wonder Model Boat of 1923"

ASIDE from being the greatest value ever offered, this newest Thompson boat embodies features never before combined in one model. With propeller above keel-bottom, this boat will cruise the shallows or carry you through treacherous waters—amid lurking logs, rocks or sandbars—without injury to the propeller. Head for the water's edge and come in full speed up a sloping beach if you wish!

Rides the roughest sea in perfect safety—and with comfort. Equipped with finest light-weight motor. Quick in pick-up from trolling gait to real speed. Boat may be turned bottom-up when not in use. Two men can carry it. Women or children can start and operate it. Economical, too—a gallon of gasoline will last four hours.

Just the craft you've wanted—a combination power and rowboat of ideal design for fishing, hunting or pleasure purposes.

Save Money—Order by Mail

Thompson Bros. Boat Mfg. Co.
103 Ellis Avenue, Peshtigo, Wis.



Get Our BOAT CATALOG!

Further information on "Beach Model," together with full description and color illustrations of our full line of better-built boats, free on request.
Canoes.... \$45 up
Rowboats... \$34 up
Hunting & Fish Boats \$22 up
Rowboats for Outboard Motors... \$36 up
Motor Boats (16 to 26 ft. long)... \$200 up



Keeping Track of Time at Sea

(Continued from page 27)

or eastern standard time. In fact Boston time is about 12 minutes later than New York time—just the amount of the difference of longitude about 3°, and equals 12 minutes of time.

We hear a lot about Greenwich time in navigation—this is merely the local time of London. But it happens that London, or rather the observatory of Greenwich just outside the city, is on the 0° meridian, hence is the starting point of all longitude. This will show why Greenwich time is so important a what time it is at a certain instant at the 0° meridian, then by factor in the practice of navigation, because if a mariner knows calculation determines the time at his ship at the same instant, their difference in h, m and s converted (Table 7, Bowditch) into the corresponding "°" will be the distance in arc, R or longitude, the ship is east or west of 0° or Greenwich.

It then becomes a necessity for every ship to carry the time at Greenwich with her around the world. This for the purposes of accuracy must be done with a delicate time-piece, and every care taken to preserve the greatest precision, for every second's error of time, brings with it an error of 15"; error of longitude. The driving force of the mainspring is made uniform by a variable lever, and while every effort is made to preserve the instrument from sudden and violent changes of temperature yet it is equipped with an expansion balance made of different metals whose differing expansive qualities compensate reasonable changes of temperature. It is hung in gimbals like a compass, by which it is eased of the motion of the sea. In these respects the chronometer differs from an ordinary accurate clock. Thus it is that as every steamer carries a chronometer set to Greenwich mean time the household time of England is carried on every sea.

Greenwich mean time has another importance which keeps the navigator constantly seeking it: The nautical almanac, containing all the elements of nautical astronomy, is based on Greenwich mean time or G. M. T. That if he wants the declination of the sun, or Jupiter, the equation of time, or the right ascension of the moon, at a certain moment, this moment must be expressed in terms of Greenwich mean time, in order to take it from the columns of this publication. Should this moment be expressed in any other form of time, such as ship's apparent time, it must be converted into the corresponding G. M. T.

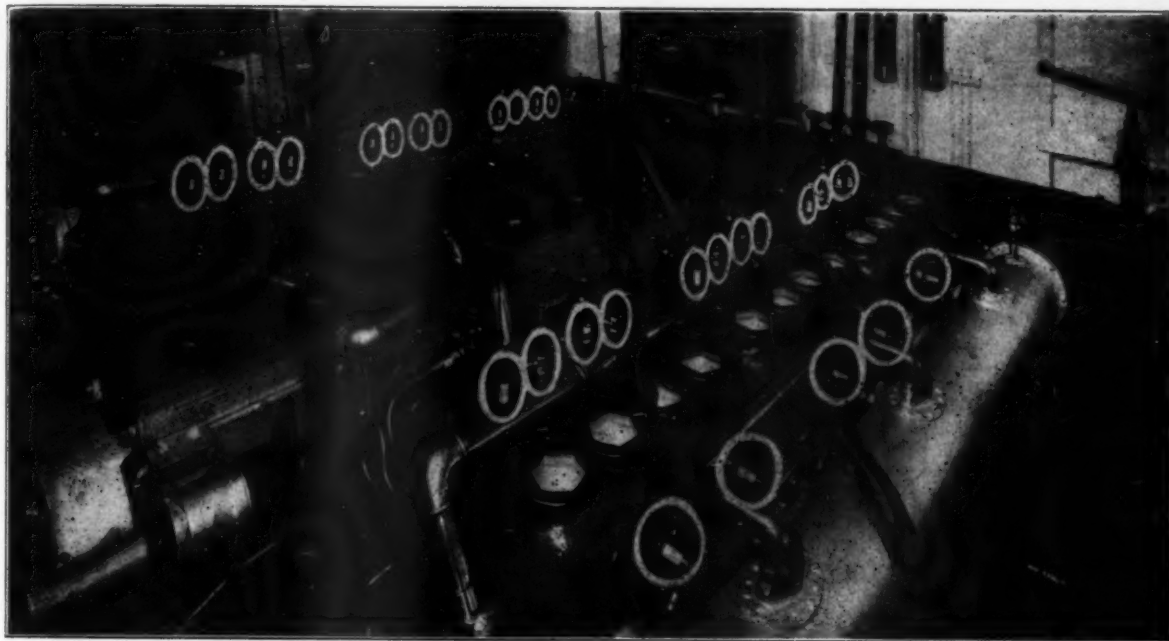
If the mariner has the ship's apparent time and desires the G. M. T., he would apply the longitude in time to the ship's apparent time, adding it if the longitude was West, because Greenwich is eastward and its time is later, therefore by adding it is made later. If the ship's time was 8 p. m. and the difference of longitude was 4 hours, adding makes the Greenwich time 12 hours or midnight—that surely is later. But should the longitude be East—the difference of longitude in time would be subtracted, because Greenwich is westward and has an earlier time. Again, if the ship's time was 8 p. m. and the difference of longitude was 4 hours East, then by subtracting the Greenwich apparent time or G. A. T. becomes 4 p. m., which is earlier.

The illustration started with the ship's apparent time so after applying the difference of longitude the kind of time has not changed, except from ship time to Greenwich—it is still apparent time. The equation of time makes the conversion into mean time. By reading the note at the foot of the page in the nautical almanac running as follows: "The equation of time is to be applied to G. M. T. in accordance with the sign as given." we learn which way to use the equation. In the case we are considering the G. A. T. is to be changed to G. M. T.—the equation is to be applied to G. A. T., and hence must be used opposite to the sign as given.

Now if the navigator desires to learn the error of his compass he needs the ship's apparent time before he can use the azimuth tables, a necessary part of the problem. It is done by noting the time by the chronometer, which is G. M. T., and applying to it the difference of longitude in time and ship's mean time is at hand. If the ship was west this longitude was subtracted, because her time must be earlier than Greenwich. Having the mean time at ship the equation of time will change it into ship's apparent time.

There is a problem aboard ship keeping the clocks set to ship time as she is forever changing her meridian and correspondingly her time. Just as much as a vessel moves in longitude in a day so will her clocks be wrong the next noon. Should she cover the distance from 60° W to 63° W or 3°—her clocks will be in error 12 minutes because the local time of 60° W is not the local time of 63° W—the sun takes 12 minutes to go from 60° to 63° W. In the case just cited the clock would be set back 12 minutes so as to agree with the earlier time of the more western meridian of 63° W. So with all vessels sailing westward. In sailing eastward the vessels are reaching meridians whose easterly position makes their time

(Continued on page 138)



The engine room of ATLANTAN, the handsome 75' cruiser recently built by Consolidated Shipbuilding Corp. for J. H. Nunnally, Atlanta, Ga. Two Speedway engines, RAJAH equipped of course.

RAJAH

SPARK PLUGS



Standard Rajah Plug \$1.00
Waterproof Rajah Plug \$1.25
Giant Rajah Plug \$1.25



Thumb Nut Terminal

You'll find RAJAH Spark Plugs on fine boats wherever you go. They are standard spark plug equipment on several of the highest grade marine engines, such as Speedway and Murray & Tregurtha. You'll find them in smaller boats, too,—in runabouts, racers, cruisers and little outboard kickers.

There is one big reason back of all this RAJAH Popularity for marine use. It is simply the quality of service Rajah Plugs have always given.

No fancy design, no give-away prices to the engine builder, no sales contests to force them on an unsuspecting public, but always the highest quality in workmanship and materials, made doubly sure by many rigid inspections so that any possible defect will show up in our factory instead of in your boat.

And then there's the famous Waterproof Rajah Plug. It is Waterproof, Shockproof, and Breakproof—the only spark plug really suitable for outboards and other exposed marine engines.

If your dealer doesn't sell genuine Rajah Spark Plugs, order direct from us, stating thread wanted.

For fine boats and all others it's worth while to equip your spark plug cables with the famous Rajah Terminals. One Rajah Thumb Nut Terminal free with each Rajah Plug. Standard Rajah Terminals, 10c each. Solderless Rajah Terminals, 15c.

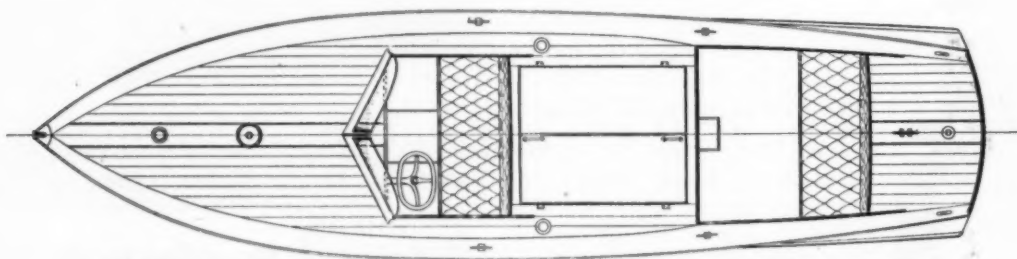
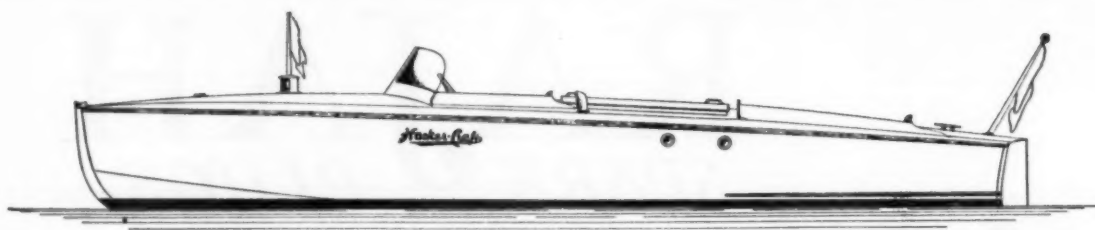
Manufactured by

RAJAH AUTO SUPPLY CO.

Bloomfield, N. J., U. S. A.

Hacker-Craft

THE DOLPHIN BOAT



LENGTH—23 FT.

BEAM—6 FT.

NEW HACKER CREATION

All Mahogany Natural Finish Boat—Seats 8 People—
Double Cockpit—Speed Up to 25 Miles Per Hour

\$2750⁰⁰ F.O.B. DETROIT

Descriptive Circular Ready for Distribution

BOAT BUILDERS

We are furnishing many boat builders with our standard designs of tested boats. We also do special designing and engineering for these builders.

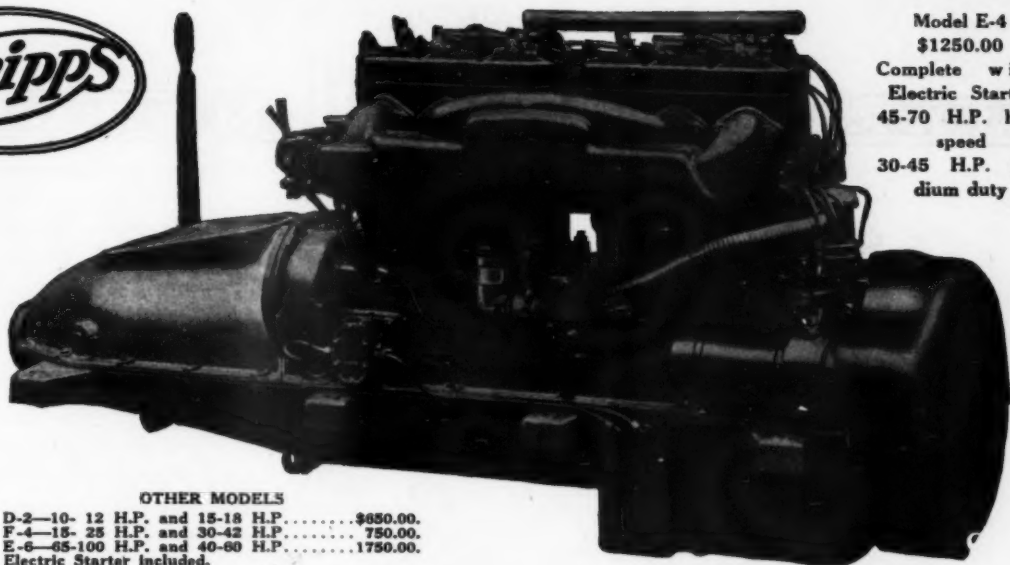
Try our service.

THE HACKER COMPANY

6304 E. JEFFERSON AVE.

DETROIT

MICHIGAN



Model E-4
\$1250.00
Complete with
Electric Starter
45-70 H.P. high
speed
30-45 H.P. me-
dium duty

OTHER MODELS

D-2—10- 12 H.P. and 15-18 H.P. \$650.00.
F-4—15- 25 H.P. and 30-42 H.P. 750.00.
E-6—65-100 H.P. and 40-60 H.P. 1750.00.
Electric Starter included.

Delivering a Real Service

Active production on the new model F-4 SCRIPPS rounds out a complete and well balanced line ranging from ten to one hundred horse power—all reflecting the highest ideals in fine engine building.

Superlatives and the spectacular in advertising are not needed to acquaint the boating fraternity with SCRIPPS merit. Nor is the building of fine motors a new experience with us. Close on to twenty years, the SCRIPPS has won the admiration of yachtsmen and commanded the respect of the industry.

Enjoy boating to the fullest through the sense of security inspired by the heavy crankshaft, the large bearings, the automatic pressure lubrication and the sturdy construction—the absence of all worries through the feeling that everything is right—that nothing will go wrong.

Consider the pleasure that will come from the modern conveniences for comfort and ease,—electric starting, the accessibility, the perfect mechanical operation—the cleanness and the freedom from noise and vibration, that make you almost unmindful of the mechanism that drives your boat.

Experience the personal satisfaction derived from the knowledge that nothing finer or more up-to-date in marine power plants exists than your SCRIPPS.

Whether measured in terms of comfort, satisfaction, durability and economy, or on a cold hard "facts and figures" inventory of power, material or equipment, SCRIPPS prices offer the most.

Let us give you the full advantage of our constructive engineering service in solving your power problems.

SCRIPPS MOTOR COMPANY

5819 Lincoln Ave.

Detroit, Mich.

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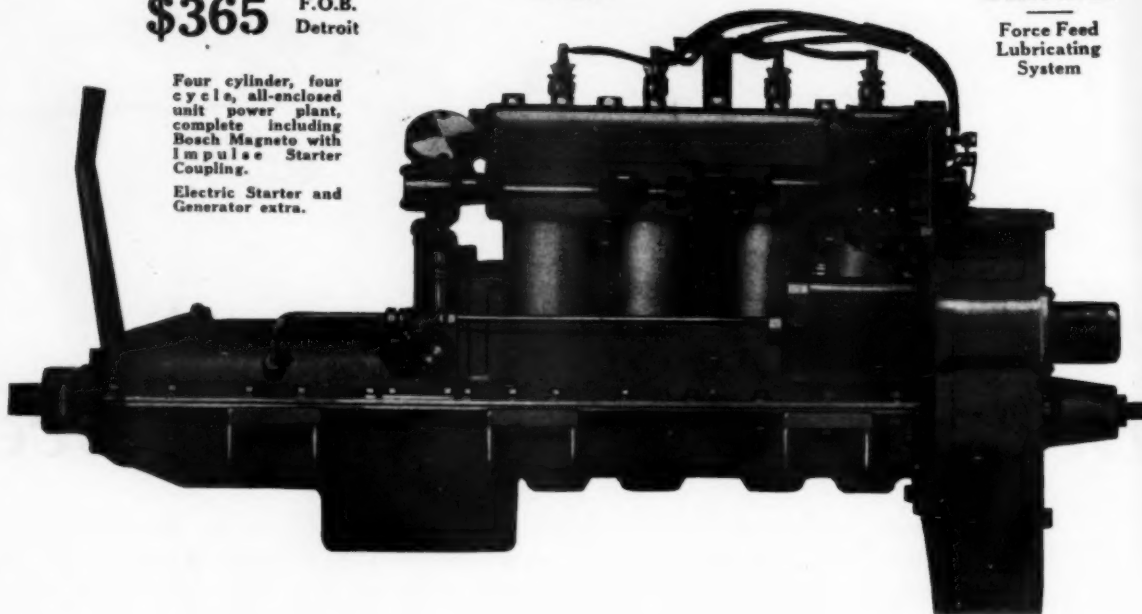
\$365 F.O.B.
Detroit

16 H.P.
at 1000 R.P.M.

Force Feed
Lubricating
System

Four cylinder, four
cycle, all-enclosed
unit power plant,
complete including
Bosch Magneto with
Impulse Starter
Coupling.

Electric Starter and
Generator extra.



A High Grade All-Enclosed Marine Engine with Ford Interchangeable Parts Service

THE International-16 is the kind of an engine that will give real satisfaction in your boat. It is strictly a marine type with the sturdy construction and rugged parts that stand up under heavy service and high speeds. You can operate it at 500 R.P.M. up to 1200 R.P.M. and burn either gasoline, kerosene or distillate for fuel.

A big feature of the International-16 is the fact that wearing parts are absolutely interchangeable with standard Ford motor parts. This means you can always secure replacement parts quickly and cheaply in any part of the world.

This includes the pistons, rings, connecting rods, wrist pins, bushings, bearings, crankshaft, timing gears, camshaft, camshaft bearings, valves, cylinder block,

etc. The bronze gears in the oil pump are interchangeable with Chevrolet oil pump gears.

From many standpoints the Ford motor is the most successful internal combustion engine ever built. No one can question its power, endurance or efficiency. The International-16 duplicates the strength and efficiency of this motor in a real marine type.

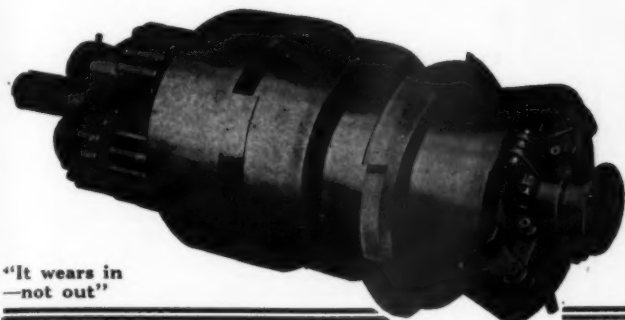
We have a Special Proposition for Dealers and Boat Builders
Write today for complete specifications

INTERNATIONAL MFG. COMPANY

439 Fort Street, East
DETROIT, MICH., U. S. A.

Install a STANDARD

The REVERSE GEAR
with the
**MULTI-CONE
CLUTCH**



"It wears in
—not out"

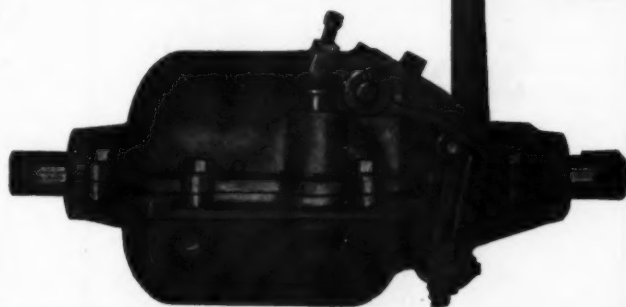
THERE are other good reverse gears but there is no other gear with the **MULTI-CONE CLUTCH**, an exclusive Standard feature. Therefore no gear can equal the Standard because there is no clutch to equal the Standard **MULTI-CONE**.

This clutch takes hold like velvet, holds on to the load like a bull-dog and releases instantly when you throw the lever. It actually improves with use and is so easy to adjust that you can do it in a few seconds without any other tools than a screw driver.

And then remember that the Standard is an enclosed gear, running in oil. This reduces wear and noise to the minimum. The case is absolutely oil tight. A ball thrust bearing is built into the case. This gear is easy to install and is built to outlast your motor.

Write today for details and prices giving size and power of your motor.

Model "C" Standard Multi-Cone
for
100 H.P. Hall-Scott
Entirely Enclosed
\$100 COMPLETE

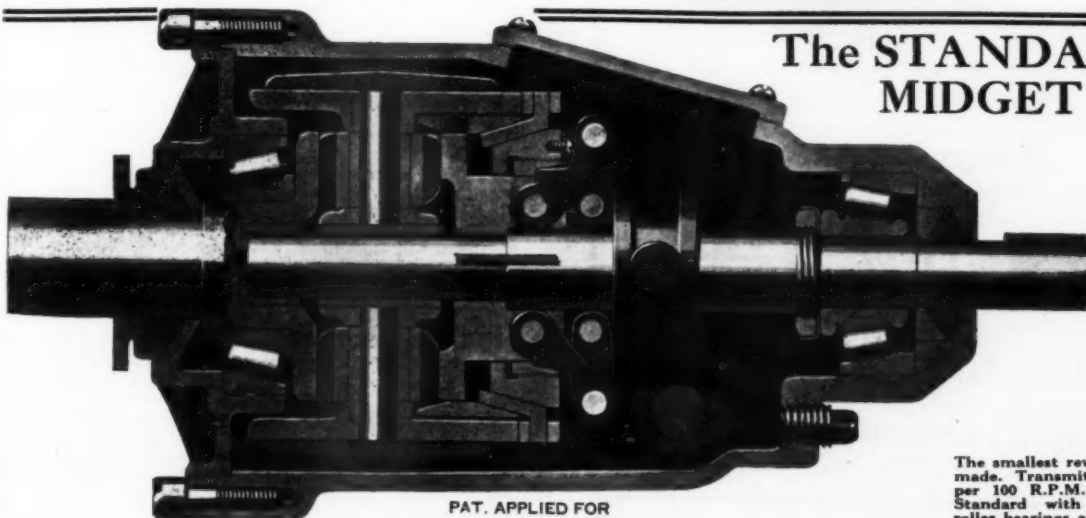


The smooth engagement and tremendous holding power of the **MULTI-CONE** is due to its great friction surface. See the four large cones in the illustration and note that all the friction surface is at the point of greatest diameter, which increases the leverage and holding strength. These cones are much larger and sturdier than the thin plates used in a multiple disc clutch.

STANDARD GEAR CO.

2819 Brooklyn Ave., Detroit, Mich.

The STANDARD
MIDGET

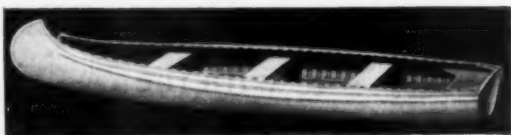


PAT. APPLIED FOR

The smallest reverse gear made. Transmits $\frac{1}{2}$ H.P. per 100 R.P.M. A real Standard with Timken roller bearings and Multi-Cone Clutch.

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"Old Town Canoes"



The Only Fine Canoe Designed for Portable Motors

HERE it is—a genuine "Old Town Canoe" with a square-stern. Clamp on your outboard motor, and go faster with it than you ever did before.

The Square-Stern is made like all "Old Town Canoes." Built into it is the fine "Old Town" combination of rugged strength and exceptional lightness. It will last for years. And, because it is canvas covered, it never needs caulking.

"Old Town Canoes" are the lightest, strongest, steadiest canoes made. The new 1923 catalog shows all models in colors. Write for one to-day.

OLD TOWN CANOE CO.
383 Middle St., Old Town, Maine, U. S. A.

SPENCER-SMITH PISTONS



Largest Manufacturers
of

Pistons
Exclusively

SPENCER-SMITH MACHINE CO.
HOWELL, MICHIGAN

New Orleans Mid-Winter Races Mississippi Valley Power Boat Association Rules

Feb. 17-18, 1923

151 Cubic Inch Class, 2 Heats of 5 Miles Each

Boat	Owner	Home Port	Time 1st heat	Time 2nd heat	Best Speed
Margaret III	Selby-Conover	Pekin, Ill.	11:52	9:19	32.2
Miss Peoria	R. H. Daniels	Peoria, Ill.	11:58	13:07	26.1
Miamit	J. H. Judge	New Orleans	D.N.S.	D.N.F.	...
Lessie	A. W. Sinclair	New Orleans	13:35	D.N.S.	22.1

21 CUBIC INCH CLASS, 2 HEATS OF 5 MILES EACH

Boat	Owner	Home Port	Time 1st heat	Time 2nd heat	Best Speed
P. D. Q. VI	A. C. Strong	Evanston, Ill.	9:05	9:14	33.0
Margaret III	Selby et al	Pekin, Ill.	9:09	*	32.8
Miss Peoria	R. H. Daniels	Peoria, Ill.	17:56	*	16.7

320 CUBIC INCH CLASS, 2 HEATS OF 5 MILES EACH

Boat	Owner	Home Port	Time 1st heat	Time 2nd heat	Best Speed
Ethel XI	C. P. Hanley	Muscantine, Ia.	8:26	8:25	35.6
P. D. Q. VII	A. C. Strong	Evanston, Ill.	8:28	*	35.4
Margaret III	Selby et al	Pekin, Ill.	9:49	*	30.6

610 CUBIC INCH CLASS, 2 HEATS OF 10 MILES EACH

Boat	Owner	Home Port	Time 1st heat	Time 2nd heat	Best Speed
Meteor Six	W. B. Wilde	Peoria, Ill.	13:02	13:30	46.0
Peggy	F. Schram	Milwaukee	13:32	13:37	44.4
Cecile	J. Q. Gill	Peoria, Ill.	15:18	15:37	39.2
Evelyn C	A. S. Cox	New Orleans	16:27	16:37	36.6
Elanar	W. H. Ruhaak	Peoria, Ill.	17:37	D.N.F.	34.1
Black Diamond	Barrick & Weber	Peoria, Ill.	D.N.F.	14:24	41.6

1100 CUBIC INCH CLASS, 2 HEATS OF 10 MILES EACH

Boat	Owner	Home Port	Time 1st heat	Time 2nd heat	Best Speed
Arab VI	Ralph H. Sidway	Buffalo, N. Y.	14:07	13:47	43.5
Cecile	J. Q. Gill	Peoria, Ill.	14:59	†	40.0
Docs	L. R. Van Sant	Peoria, Ill.	15:29	†	38.8
Meteor Six	W. B. Wilde	Peoria, Ill.	D.N.F.	†	...

725 CUBIC INCH CLASS, 1 HEAT OF 10 MILES

Boat	Owner	Home Port	Time 1st heat	Time 2nd heat	Best Speed
Meteor Six	W. B. Wilde	Peoria, Ill.	12:54	.....	46.5
Black Diamond	Barrick & Weber	Peoria, Ill.	16:20	.....	36.8
Cecile	J. Q. Gill	Peoria, Ill.	16:25	.....	36.5
Ethel XI	C. P. Hanley	Muscantine, Ia.	15:28	.....	38.8
Docs	L. R. Van Sant	Peoria, Ill.	D.N.F.	.....	.....

UNLIMITED SINGLE ENGINE CLASS, 1 HEAT OF 15 MILES

Boat	Owner	Home Port	Time 1st heat	Time 2nd heat	Best Speed
Century Tire	C. J. Venn	Chicago, Ill.	17:17	.....	52.1
Miss Chicago	Sheldon Clark	Chicago, Ill.	18:08	.....	49.7
Lady Orleans	Doherty & Fetterly	New Orleans	D.N.F.	.....	.....
Baby Holo	Horace Dodge	Detroit, Mich	D.N.F.	.....	.....
Miss Dubonnet	Ferran & Gallagher	New Orleans	D.N.F.	.....	.....

* On Feb. 18, the 151, 215 and 320 cubic inch classes were run together as one heat.

† On Feb. 18, the 725 and 1,100 cubic inch classes were run together as one heat.

SUMMARY

33 boats finished complete heats.
9 boats finished both heats of the 2 heat races.
6 boats finished the heat of the 1 heat races.
15 different boats finished one or more complete heats.
12 different boats finished complete races of one or more heats.
Best speed for one heat (15 miles) made by Century Tire—52.7 miles per hour.
Best speed for one lap (2½ miles) made by Century Tire—55.2 miles per hour.

Selling Staff Increased

Additions have been recently made to the selling staff of Edward Smith & Co., Varnish, Color and Enamel Manufacturers, Long Island City, N. Y. R. L. S. Doggett, who so ably represented Valentine & Company in New Jersey for twelve years, resigned from that firm the first of the year and has associated himself with Edward Smith & Company to represent them in his old territory. Geo. C. Clark, who formerly represented Edward Smith & Company has returned to the fold and is working among his old friends and customers in New York City.

Addition to Johnson Factory

In conjunction with the greatly increased production necessary to meet the demands of the trade, the Johnson Motor Co., South Bend, Indiana, are just completing a new addition to the factory in order to house the expanded office force, and thus make available for production the space now occupied by the offices. The factory is now operating at a higher rate than ever before, but the added room thus provided will make possible the even greater production needed to meet the increasing demand.



When You Feel the Itch of Rod and Reel

START to plan now for the great sport you're going to have this spring and summer—when you put on your oldest suit and battered hat, take your rod and line and let the world go hang. Oil your reel. Varnish or enamel your rod. Re-place guides. Get new line and lucky plugs—and then to insure the "fishingest" year you've ever enjoyed, order a

Spinaway
Detachable
Outboard Motor

There are two of the finest motors ever made waiting for your nod of recognition and the chance to prove their worth as fishing companions. A superb Twin, powerful and speedy—a sturdy Single, reliable and strong. Both motors are fish trained. They run smoothly and quietly. They're ready to serve at any hour of the day. They'll take you anywhere and bring you back safely and without fatigue. They're light, dependable and economical to run. They'll grin at abuse. They're pals, that's what they are, pals of every fisherman.

Go to the Spinaway dealer in your town and meet these two Pals of Play. If you don't know his name, write to us and we'll introduce you to the Single and Twin Spinaway Outboard Motors by a handsome catalog. No obligation at all.

DEALERS:—Write today for exclusive proposition

Spinaway Boat Motor Co., 100 So. Chicago Ave., Freeport, Ill.

SPINAWAY BOAT MOTOR CO.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating, 119 West 40th Street, New York





NEW JERSEY COPPER PAINT

Your best guarantee of satisfactory results from the use of marine paint is the name "New Jersey" on the label. For over a generation this name has been accepted as a symbol of quality by boat builders and yachtsmen.

*Send for Color Cards
and*

*"Davy Jones Locker"
which tells how to paint a boat.*

New Jersey Paint Works
HARRY LOUDERBOUGH, Inc.
Jersey City, N. J.

"New Jersey" Best Spar Varnish has a good body and possesses extreme durability. Many yachtsmen who have tried them all report that "New Jersey" is the best all around spar on the market.

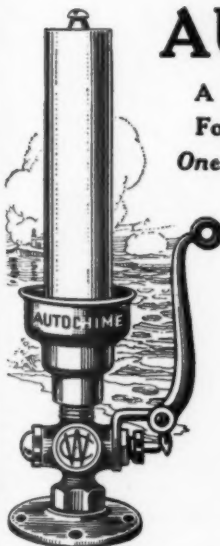
"New Jersey" Yacht White is the most popular in use today. Its popularity is due to its easy working qualities, its whiteness, its finish which is easily cleaned and its wearing quality which produces an excellent surface for repainting.



TRADE MARK

AUTOCHIME

A Deep-Toned Musical Whistle
For Air or Burned Gas Pressure
One of the 1,001 WC Products



TUNED to first, third and fifth notes of the scale. One of the sweetest-toned, yet most powerful whistles made. Its deep, musical notes are blended and intensified by the megaphone effect of the patented cup-shaped bell surrounding the sound openings. Blows easily at low pressure. Look for name AUTOCHIME

and WC trade mark on bell. Buy from your dealer. He can fit you out complete with AUTOCHIME, WC Whistle Valves and special fittings for attaching Whistle to smoke stack or deck.

Get This Book of Helpful Hints for Motor Boaters

"Sea Craft Suggestions and Supplies" solves those daily "puzzlers" that few know how to handle. Tells how to Box the Compass; what is Proper Ground Tackle; gives hints on Steering Gear, etc.; describes WC Dependable Marine Hardware; tells uses. Compiled from 75 years' experience in making marine fittings. Sent prepaid for 50c.



WILCOX, CRITTENDEN & CO., Inc.

(Established 1847)

4 South Main Street, Middletown, Conn.

MAXIM SILENCER



Four U. S. War Dept. Hopper Dredges

The four U. S. War Dept. dredges being equipped with Westinghouse Diesel-Electric drive are 268' 5" overall and have a capacity of 1250 cubic yards per hour. The total horsepower of the Diesel-Electric power plant will be 3450. Each equipment consists of three 1000 h.p. MacIntosh-Seymour gas engines; two 800 h.p. Westinghouse propulsion motors; one 800 h.p. pump motor; and 35 auxiliary motors aggregating 550 h.p.

—are being equipped with Diesel-Electric drive.

This drive has proved ideal for dredge application because of the ease and the convenience with which power may be transmitted to the propelling equipment and also to the many electrically driven auxiliaries, while taking advantage of the low fuel consumption of the Diesel engine.

Other electric dredges equipped by Westinghouse are the Allegheny and the Elizabeth Pfeil on the upper Ohio and the Gulfport at New Orleans. These latter are excellent examples of the advantages afforded by this equipment.

Write our nearest district office for full information.



Westinghouse Electric & Manufacturing Co.
East Pittsburgh, Pa.

Sales Office in All Principal American Cities
Service Stations in Principal American Ports

Pacific Coast Representatives
Hunt, Mirk & Co., San Francisco

Westinghouse

Advertising Index will be found on page 128

PLANTS

Robins Dry Dock & Repair Co.
Erie Basin, Brooklyn, N. Y.

Tietjen & Lang Dry Dock Co.
Hoboken, N. J.

Tebo Yacht Basin Co.
Foot of 23rd St.
Brooklyn, N. Y.

White Fuel Oil Engineering
Corporation

Todd Oil Burning Systems
742 East 12th St., New York

Clinton Dry Docks, Inc.
Foot of Clinton St.
Brooklyn, N. Y.

Todd Shipbuilding & Dry
Dock Co., Inc.
Mobile, Ala.

Todd Dry Dock &
Construction Corp.
Tacoma, Wash.

Todd Dry Docks, Inc.
Harbor Island, 16th Ave. S. W.
Seattle, Wash.

Todd Oil Burners, Ltd.
London, England

YACHT owners recognize in the reliability of the Tebo Basin Plant of Todd Shipyards Corporation their best assurance that their vessels will be given the care they merit. Special facilities are offered for building, refitting, repair and storage.

TODD SHIPYARDS CORPORATION

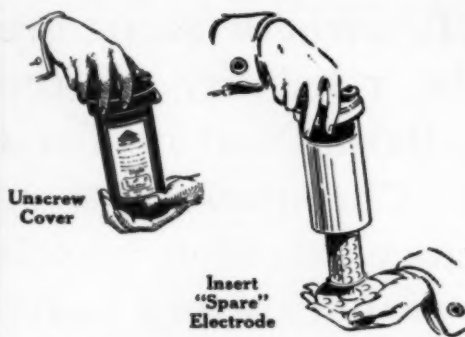
Plant of Tebo Yacht Basin Co.

Foot of 23rd Street, Brooklyn, N. Y.



Yachts in Winter Storage
at the Tebo Plant





How Would YOU Reach PORT With DEAD BATTERIES

Port is always easy to make where MAGNO batteries are used for ignition. The MAGNO is instantly recharged at sea or anywhere. Not even a tool is needed.

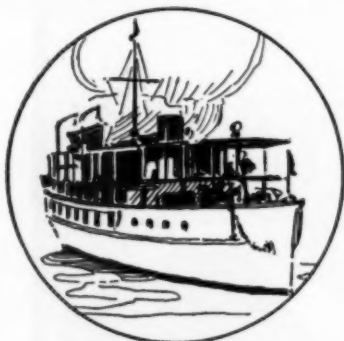
Simply unscrew cover and insert "Spare" electrode. "Spare" electrodes can be kept in the boat indefinitely without running down.

Write today for descriptive folder on this unusual battery.

Magno Storage Battery Corp.
Aeolian Bldg. New York

STORAGE BATTERY
MAGNO

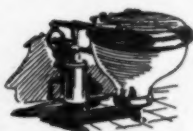
1828 **MOTT** 1923



For the Small Boat

Amplly strong—reliable in action—
yet small in size and light in weight.

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Fisher-Allison Race Decision

(Continued from page 28)

the delegates voted or approved of as the location of this race was Hamilton, Ont., and the date set for the race was August 24, 25 and 26. Challenges were duly received for the trophy and the boats were all entered properly, and the preliminaries connected with the race, up to the day of start, were taken care of by the local Hamilton Committee, working in conjunction with the Committee as provided in the deed of gift, which consists of the President of the American Power Boat Association, Albert L. Judson, who was unable to be present, and who has named Commodore Eagan in his place, the Secretary of the Racing Commission of the American Power Boat Association, and the Representative of the local Hamilton Club handling the race was Commodore Charles Pook.

A short time, a matter of an hour or two previous to the first race, a protest was filed with the Committee at Hamilton, signed by Messrs. Birge of Buffalo and Stephens of Syracuse, protesting the boats known as the Baby Gar III, owned by Commodore Gar Wood, of Detroit, and Packard Baby Gar, owned by Col. J. G. Vincent. I have the original protest here, which I shall file with Col. Hayward, and which reads as follows:

"To the Fisher-Allison Race Committee.

"Gentlemen:

"We, the undersigned, respectfully protest Gar Wood's entry in the Fisher-Allison Race and Colonel J. Vincent's entry in the Fisher-Allison Race, as they are powered with plants other than those specified in the deed of gift, and we respectfully refer you to Article 7, paragraph 'K' in the Deed of Gift, also the resolution passed at the Annual Meeting of A. P. B. A., October, 1921, as sufficient grounds for said protest.

(Signed)

"HUMPHREY BIRGE,

"DR. GEO. N. STEPHENS.

August 24th, 1922.

The grounds on which the boats Baby Gar III. and Packard Baby Gar were protested were that the deed of gift was violated, and it was stipulated in the protest that the particular parts of the deed of gift violated were the following paragraphs:

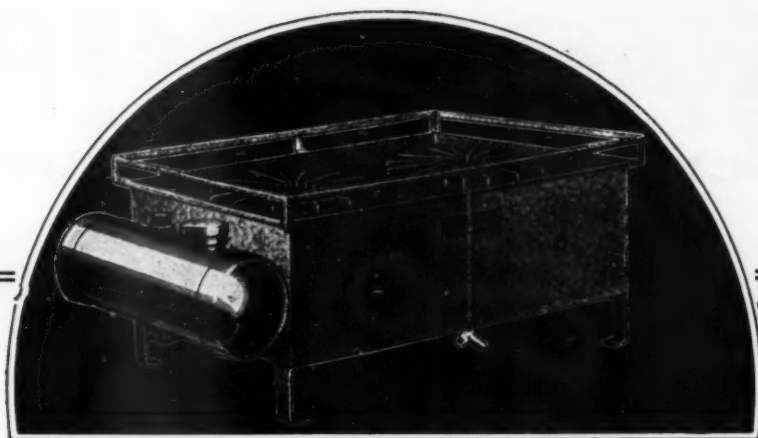
Paragraph K on page 138 and the resolution on page 144.

The Paragraph K on page 138 stipulates that the form of Power Plant shall be "One or more stock marine motors. The owner shall file an affidavit, sworn to by the engine manufacturer, stating that the motor or motors are regular stock marine motors, and are not special in any particular." After January 1, 1923, the first sentence to read: "The form of power plant shall be one stock marine motor."

The resolution states: "In view of the fact that there is not sufficient data available at this moment to allow us to determine the suitability of the Liberty and other aeroplane and aviation engines for marine service, particularly for installation in boats of a wholesome character, it was resolved that it be the sense of the meeting that in the race for the Fisher trophy in 1922, no Liberty, or other aviation motors or motors not originally designed and built for marine purposes, be allowed to compete in this race."

The local committee at Hamilton was very well organized, had its men appointed for the various details in connection with racing. One of the men on the local committee at Hamilton was appointed in charge of inspection of boats, Mr. Brown. Mr. Brown and his assistants thoroughly inspected all the boats entered, and passed his O. K. on to the committee at Hamilton. Upon receipt of the protest by Messrs. Birge and Stephens, the Committee, consisting of, as I have mentioned, Commodore Pook, acting as Chairman, Commodore Eagan and myself, held a meeting, and decided in view of the fact that the Inspector at Hamilton had passed the boats and power plants as complying with the rules, and in view of the fact that the affidavit mentioned in paragraph K, stipulating the form of power plant shall be one or more stock marine motors, and were not special in any particular, had been duly filed by the owners of the boats protested, namely, Messrs. Wood and Vincent, that it would be the proper thing to permit the boats to start in the series and compete with the other boats,

(Continued on page 128)



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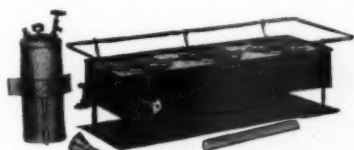
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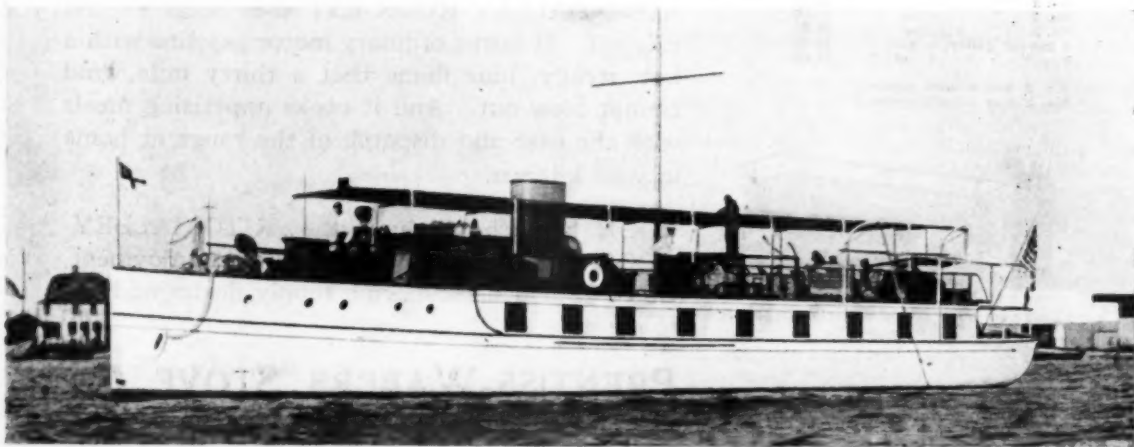
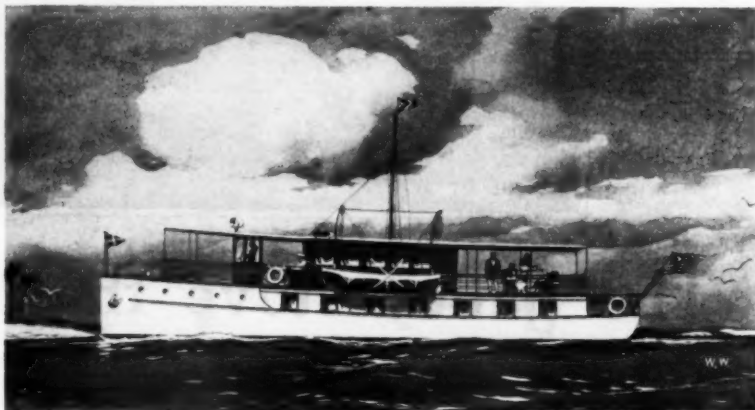
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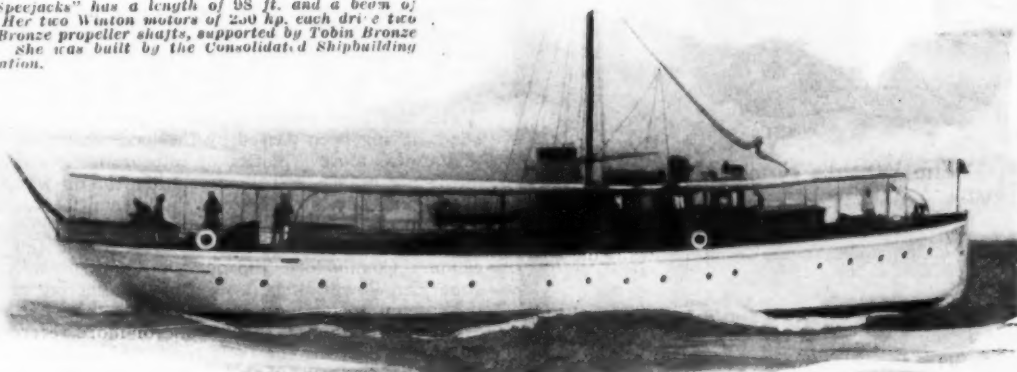


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Fisher-Allison Race Decision

(Continued from page 124)

which was done. Commodore Wood's boat, Baby Gar III, won first place in each of three heats, and Col. Vincent's Packard Baby Gar came out second in the series. These boats went through the heats with a perfect score and finished, as I have mentioned, in first and second places.

After the race was over the Committee again met and called into the meeting the parties protesting, namely, Messrs. Birge and Stephens, and the owners protested, namely, Messrs. Wood and Vincent. At this meeting it was voted that in view of the fact that in the opinion of the Committee, all rules had been complied with, and the affidavits had been sworn to and properly filed, and that the boats having been passed by the local Canadian Inspector, that it was more a matter of interpreting paragraph K as mentioned before, and the resolution, than it was a question of deciding anything else, and the Committee voted that the question of interpreting the rules should be referred to the council of the American Power Boat Association for a decision. Commodore Judson, who was president of the American Power Boat Association, and acting chairman of the council, took a mail vote of the members of the council, asking permission to appoint one or more referees for the purpose of hearing the facts connected with the protest, on both sides, and rendering a decision thereon, and reporting same back to the council of the American Power Boat Association. The mail vote taken by Commodore Judson was unanimous in favor of him appointing a referee or referees and Commodore Judson suggested that Col. Hayward be appointed the referee. Col. Hayward has very kindly consented to act as referee in this matter, and E. W. Marshall, a patent attorney of this city, who is a boat man himself, and familiar with boats, has kindly consented to act as technical adviser to Col. Hayward. The decision rests entirely with Col. Hayward and is final. If any of the parties here think that I should bring anything else to Col. Hayward's attention that I have not, I will gladly do so."

The referee then stated:

"There are a number of articles here in this declaration of trust of the Fisher-Allison trophy, which I note, in glancing through hastily, cover the conditions of the challenges, the length of the course, the conditions of the starting, and the measurements to be verified, the minimum length, piston displacements, stern exhaust, something about the seating capacity and the equipment of bulkheads, the number of same, capacity for minimum speed of thirty-five miles an hour, the longitudinal shape of the hulls, installation of the rudders, etc., etc.", and inquired:

"Do I understand that none of the questions involved in any of these articles, except paragraph K of Article 7 and the resolution of the A. P. B. A. of October, 1921, are brought into question in this hearing today? Can we narrow it down to the question involved in these two paragraphs, as to the engines themselves? Is that agreed to by everybody?"

It was unanimously agreed to.

Considerable delay has resulted from applications for additional time in which to file briefs or statements but all parties were given whatever time they asked for.

I think, under these statements, the question of the form of the affidavits filed may be eliminated because of their acceptance by the Hamilton Committee, but I do not believe that the acceptance of the boats themselves should have any binding effect on us whatever. There were protests of other of the boats and if the Hamilton Committee had taken any other action it would have eliminated so many of the contestants as to detract from the interest of the race. At any rate, it has been agreed that the present referee is to decide the matter.

The question then is were the Baby Gar III. and the Packard Baby Gar equipped with stock marine motors, not special in any particular, and further, were the motors in either or both of these boats "Liberty or other aviation motors, or motors not originally designed and built for marine purposes." It may well be that the very purpose of Mr. Fisher's donation, to wit: the development of reliability and speed, might have been defeated by a close

(Continued on page 134)

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THE IMPROVED LA MODEL 68

6 and 8 H. P. 2 cyl. - 2 cyc. Engines

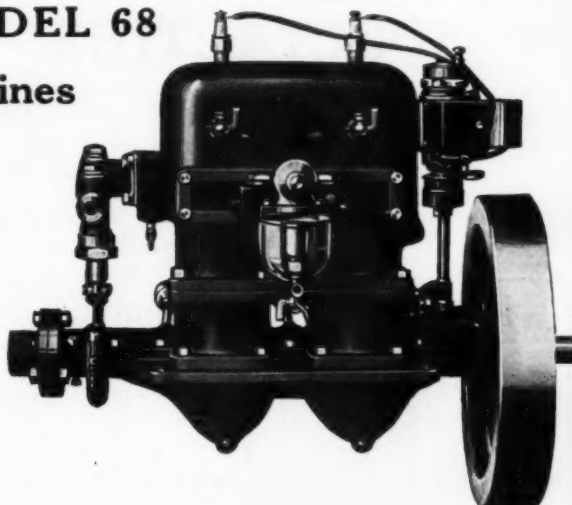
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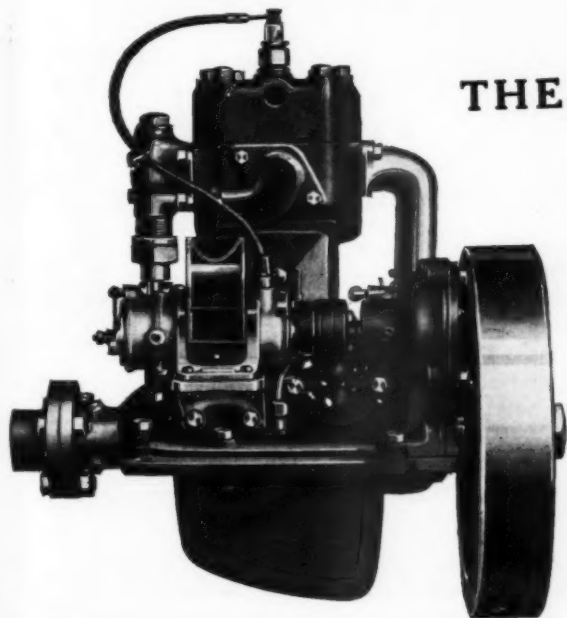
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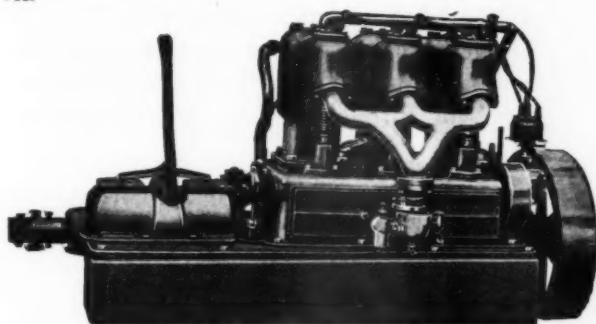


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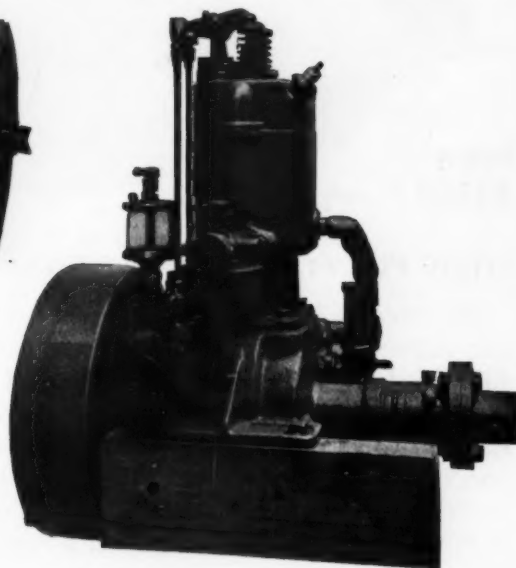


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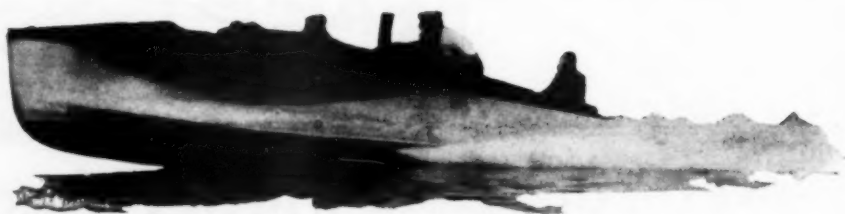
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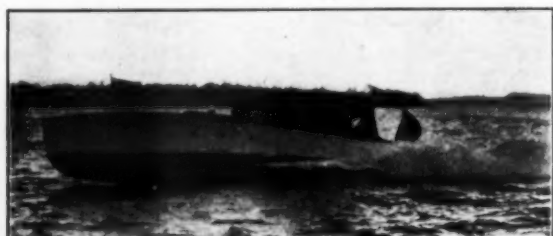
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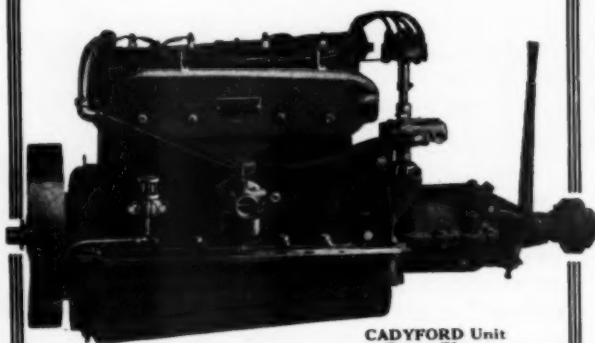
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Fisher-Allison Race Decision

(Continued from page 128)

obedience and adherence to the deed of gift and the resolution, and it would appear from the results of the race that Commodore Wood and Colonel Vincent have made a valuable contribution to the knowledge and art of fast and seaworthy motor boat building by following the plan they did follow and the installation they used. Nevertheless, the language is there and it seems to me to be reasonably clear. This language must have been read and considered by the prospective entrants to this race. Those paragraphs constituted the rules under which the game was to be played.

Did the Baby Gar III. and the Packard Baby Gar comply in all respects with these rules under the common sense application and interpretation which would naturally be put upon them? I believe not. Nor do I think it would be useful or enlightening to sportsmen or power boat men in general to enter into the technicalities of the metals used or cylinder or engine construction, such as bore, stroke, total cubic inch displacement or the technique of valve mechanism, magnetos, spark plugs, etc. It is, however, significant to note that the American Power Boat Association changed its resolution following the time of this controversy from the language above quoted to the following:

"An internal combustion engine manufactured, assembled, advertised and offered for sale as a marine engine."

The latter being clearly a much more liberal rule than the one we are concerned with.

I will take up first the question of Colonel Vincent's Packard Baby Gar and, eliminating the statements and arguments against it offered by the protestants and basing my conclusion solely on the statements of fact contained in his own brief, I must conclude that the engine he used in the race was a *special* engine and was not a stock marine motor. Colonel Vincent tells us how he produced the admirable motor which gave such a good account of itself and in a letter (marked Vincent's Exhibit E) uses the following language (Page 5, Vincent's brief):

"In answer to your letter of October 10, relative to literature on our marine motors, please be advised that we have not issued any catalogs or literature in connection with these motors. At the present time we are considering making some minor changes before putting these engines into production. As soon as the question of design is settled we expect to get out some sort of a catalog and will be glad to furnish you complete information."

This letter was dated October 16, after the race in question. Colonel Vincent's case would have been strengthened if the engine had been catalogued but the fact that it was not catalogued does not necessarily prove that it was not a stock engine but note particularly the language: "At the present time we are considering making some minor changes before putting these engines into production." If but one engine, the one used in the race, had been produced and this type of engine had not yet been put into production how can it fairly be said to have been a *stock engine*, for *stock* means an accumulated store or a reserve supply; articles accumulated or ready for use, articles the like of which are kept in stock for sale to a prospective buyer? Colonel Vincent had no stock of these engines on hand and, while it is true he might have supplied such engines on order, I think the owner or purchaser of such an engine, eliminating the influence the rules of this race might have had, would have been almost certain to say "This engine was specially built for me and my boat."

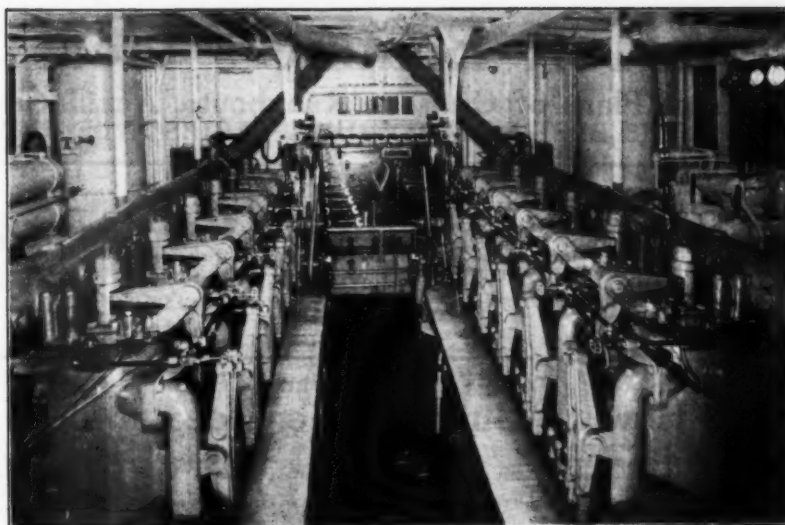
If the above conclusion is correct it will serve no good purpose to consider whether the Vincent engine was a marine engine or whether it was barred by the resolution eliminating airplane engines. I think it was *special* and was not stock and was, therefore, ineligible for the race under Mr. Fisher's deed of gift.

Commodore Wood's engine makes a stronger case in one particular and a very much weaker one in the other. The testimony seems clear that at the time of the race the Baby Gar III. was equipped with an internal combustion engine, manufactured, assembled and offered for sale as a marine engine. It clearly would comply with the modified resolution.

(Continued on page 138)



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Advertising Index will be found on page 146

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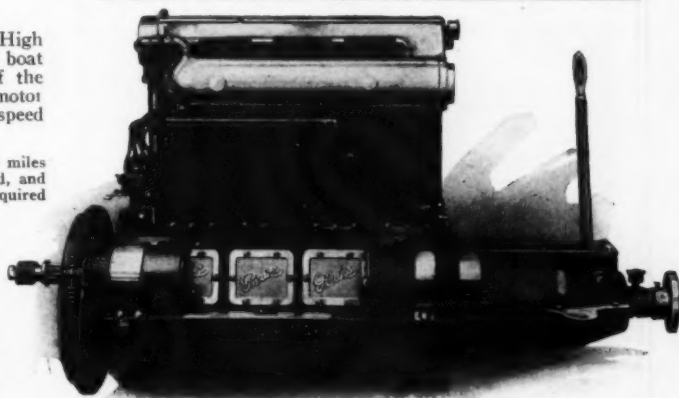


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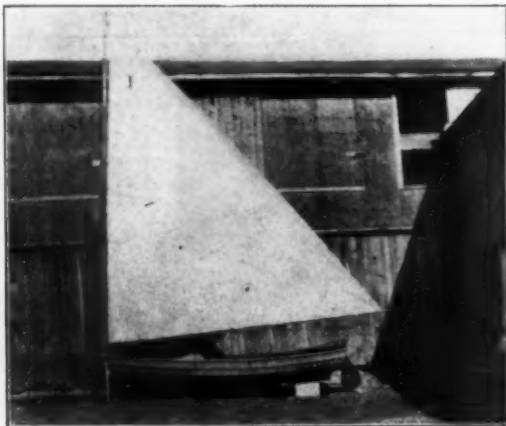
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Fisher-Allison Race Decision

(Continued from page 134)

tion of the A. P. B. A. for future races. It is undisputed that the Detroit Marine Aero Engine Company had in stock and was in position to deliver a half-dozen or more of this same kind of marine engine at the time of the race. I think the Gar Wood engine fairly and honestly complied with the terms of Mr. Fisher's deed of gift, but I am as certain that it runs afoul of the resolution of the A. P. B. A. which was in force all of the summer of 1922. It is the pedigree of this engine and not its lack of marine or stock character that I am unable to reconcile with the resolution. It seems unfortunate to me that the Association attempted to add anything to Mr. Fisher's deed. I think Mr. Fisher wanted this race contested for by boats equipped with engines that any sportsman could walk up to and look at and buy for immediate delivery, if he had the price, from a stock kept on hand for sale. Indeed, is it not possible and probable from the language he used in his deed of gift that two or more of the contestants might use the same identical engines in order to prove out the merits of hull construction? But the Association did add to the deed of gift. It declared that, owing to a lack of experience as to the suitability of Liberty, aeroplane or aviation engines no Liberty or other aviation motors or motors not originally designed and built for marine purposes should be used. Necessarily the resolution assumed that no such motor should be used even if it was rebuilt, modified or adapted to use in a boat. Commodore Wood has proved conclusively that aviation motors are suitable for marine service in boats of a wholesome character whether specially rebuilt in single units and thus installed or rebuilt in quantities with interchangeable parts for stock sale. But such rebuilding and such installation, while it may transform the motor into a marine motor, does not and cannot transform it into a motor originally designed and built for marine purposes.

Whether the action of the Association in passing this resolution was wise or unwise, whether it was a stimulant or a deterrent to healthy marine engine construction is beside the point. The purpose of that Association to eliminate just such an engine as was installed in Baby Gar III. is too clearly expressed to admit of serious controversy for Commodore Wood, as is conceded, bought a stock of aviation engines as such and all the rebuilding and fitting and transformation of these engines cannot take away from them the character that is plainly tabooed by the resolution in question.

For these reasons I reach the conclusion that the protests were well founded and this conclusion is reached although every doubt has been resolved in favor of the boats which actually came in first, and has been reached with reluctance. It would have been much pleasanter for the referee to decide that the boats which physically won the race and gave such a splendid demonstration were entitled to the fruits of victory.

Keeping Track of Time at Sea

(Continued from page 112)

later than those westerly ones of yesterday. So the clocks of easterly sailing vessels are set ahead to agree with the later time.

A good, easy way if the navigation is not too particular and the vessel is not over speedy, is to note the time by the clock as well as the chronometer, when the morning and afternoon sights are taken for longitude. In this calculation for longitude the exact ship's apparent time is obtained at the moment of observation. The navigator can then see how many minutes have passed since the sight was taken, find the error and set the clock that much ahead if bound east or back if west-bound.

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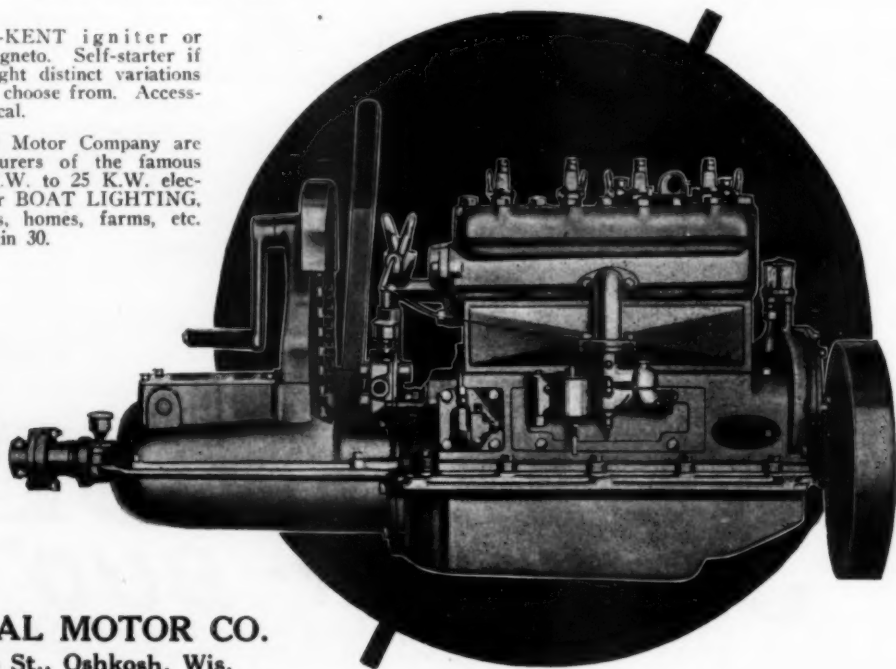
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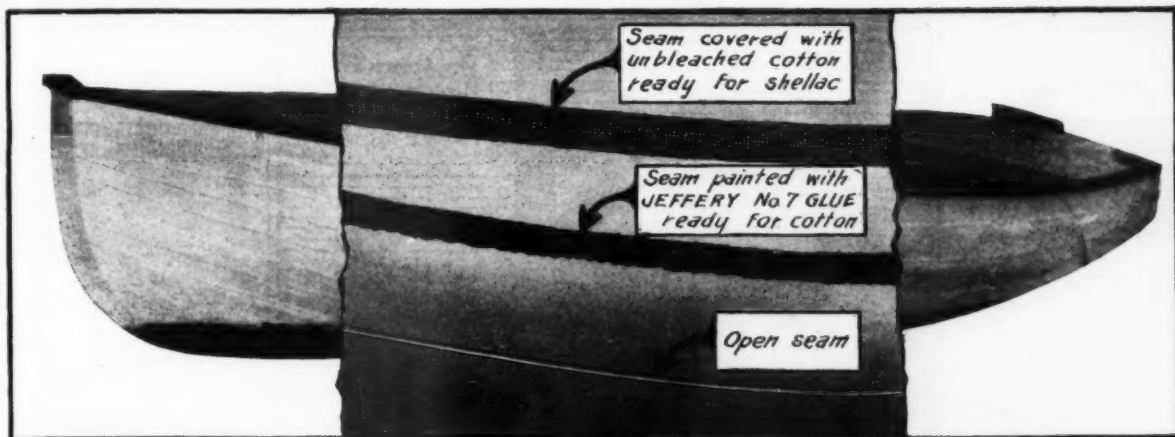
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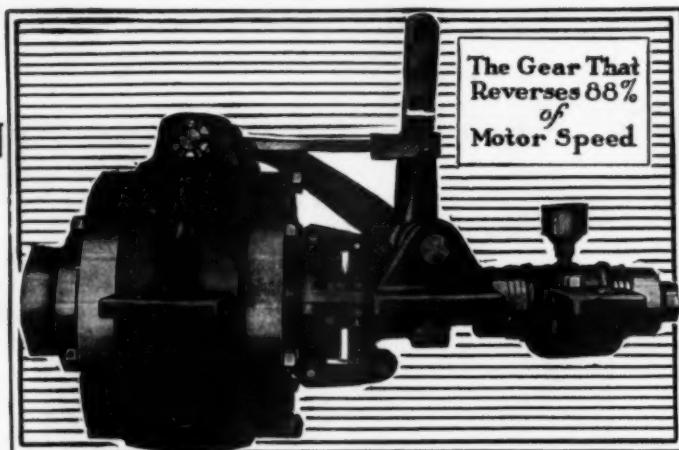
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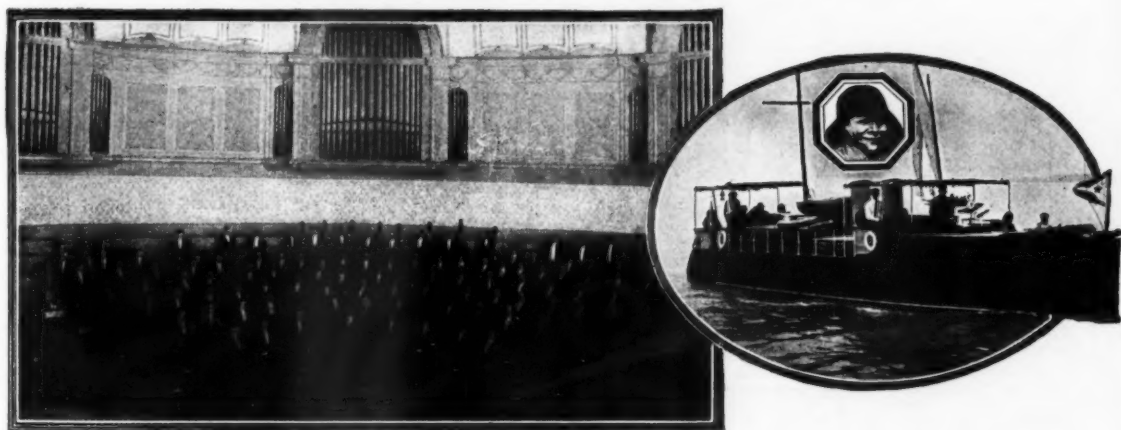


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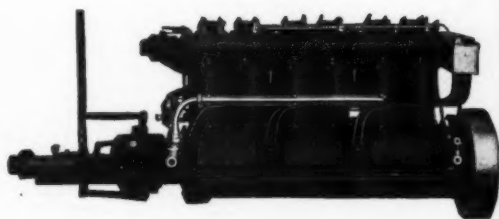
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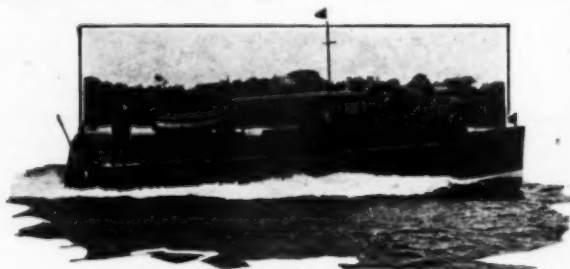
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MoToR BoatinG Advertising Index

A

Aeromarine Plane & Motor Corp. 103
 Albany Boat Corp. 93
 American Brass Co. 127
 Anderson Engine Co. 88
 Atwater Kent Mfg. Co. 72
 Auto Engine Works. 90

B

Barker Factory, The. 91
 Bassick Mfg. Co. 105
 Belle Isle Boat & Engine Co. 133
 Blood Bros. Machine Co. 108
 Bosch Magneto Corp., American. 109
 Bosch Magneto Co., Inc., Robert. 128
 Bowes, Thomas D. 68
 Brennan Motor Mfg. Co. 93
 Brooks Co., The. 92
 Bruns, Kimball & Co., Inc. 63
 Bryant & Berry Propeller Co. 92
 Buffalo Gasoline Motor Co. 1

C

Cady Co., C. N. 134
 Caille Perfection Motor Co. 145
 Caldwell & Co., J. E. 128
 Carlisle & Finch Co., The. 88
 Carlyle Johnson Machine Co. 88
 Carpenter & Co., Inc., Geo. B. 89
 Chandler Floating School Co. 95
 Champion Spark Plug Co. 101
 Classified Advertisements 64-65-66
 Columbian Bronze Corp. 89
 Comet Electric Co. 100
 Consolidated Shipbuilding Corp. 4th Cover
 Cosmopolitan Book Dept. 70
 Cox & Stevens. 46 to 54-68

D

Defoe Boat & Motor Works. 11
 Demuth & Co., Wm. 68
 Disappearing Propeller Boat Co. 100
 Dobson, B. T. 68
 Dodge Boat Wks., Horace E. 5-6-7-8
 Doman, H. C. 91
 Donnelly, William T. 90

E

Elco Works, The. 2nd Cover-73 to 76
 Elto Outboard Motor Co. 85
 Erickson, Hubbard H. & Co. 88
 Evinrude Motor Co. 71

F

Fay & Bowen Engine Co. 148
 Ferdinand & Co., L. W. 141
 Fisher, Carl G. 79
 Frisbie Motor Co. 143

G

Gardner & Co., Wm. 62
 Gielow, Henry J. 55-56
 Gill & Sons Forge & Mach. Wks., P. H. 91
 Gray Motor Corp. 111
 Gray Boats, The. 100
 Great Lakes Boat Building Co. 12
 Grebe & Co., Henry C. 58-59

H

Hacker Boat Co., John L. 114
 Haddock, R. M. 62-68
 Hall-Scott Motor Car Co. 69
 Hand, Jr., Wm. H. 68
 Havana Races 77
 Hyde Windlass Co. 88

I

International Mfg. Co. 116
 International Ship. & Marine Eng. Co. 95

J

Jennings Co., H. H. 60
 Jones, Frank Bowne. 60
 Johnson Motor Co. 139

K

Keenan, Walter Cook. 68
 Kermath Mfg. Co. 98-99
 Kuhls, H. B. Fred. 90

L

Lockwood-Ash Motor Co. 129

M

McFarland Foundry & Machine Co. 108
 Magno Storage Battery Co. 124
 Marine Engine Co. of Phila. 67
 Marine Wheel Co. 10
 Masters & Co., W. L. 65
 Mathis Yacht Bldg. Co. 126
 Mott, J. L., Iron Works. 124
 Mower, Chas. D. 68
 Mullins Body Corp. 81

N

Naval Architects & Yacht Brokers. 68
 New Jersey Paint Works. 120
 New London Ship & Engine Co. 135
 New York Yacht, Launch & Engine Co. 89
 Newport News Ship. & Dry Dock Co. 107
 Niagara Motors Corp. 80
 Nock, Frederick S. 68

O

Oberdorfer Brass Co., M. L. 84
 Old Town Canoe Co. 118
 Ottawa Cushion Co. 88

P

Packard Motor Car Co. 4
 Palmer Bros., Engines, Inc. 131
 Paragon Gear Works. 3
 Peerless Marine Motor Co. 137
 Pierce-Boutin Motors 88
 Pigeon Hollow Spar Co. 91
 Piston Ring Co., The. 110
 Prentiss-Wabers Stove Co. 125
 Purdy Boat Co. 89

R

Racine Boat Co. 84
 Rajah Auto Supply Co. 113
 Red Bank Yacht Works. 90
 Red Wing Motor Co. 96
 Regal Gasoline Engine Co. 92
 Richardson Boat Co. 90
 Rigg, Linton Yacht Agency. 61-68
 Ritchie & Sons, E. S. 90
 Rochester Boat Works. 92

S

Sanford, Harry W. 63
 Scripps Motor Co. 115
 Schellenberg, B. & Sons. 92
 Sea Sled Co. 86-87
 Sexton Motor Co., The. 94
 Skaneateles Boat & Canoe Co. 138
 Smith, Edward & Co. 78
 Snow & Petrelli Mfg. Co. 142
 Southern Cypress Mfrs. Assn. 92
 Spencer-Smith Co. 118
 Spinaway Boat Motor Co. 119
 Standard Gear Co. 117
 Standard Motor Cons. Co. 2nd Cover
 Stearns-McKay Mfg. Co. 138
 Stearns Motor Mfg. Co. 132
 Sterling Engine Co. 3rd Cover
 Syracuse Gear Co. 96

T

Tams & King. 57
 Tebo Yacht Basin Co. 123
 Thompson Bros. Boat Mfg. Co. 112
 Tiebout, W. & J. 90
 Toppan Boat Mfg. Co. 92
 Tvedt-Smith Co. 92

U

Universal Motor Co. 140
 Universal Products Co. 91

V

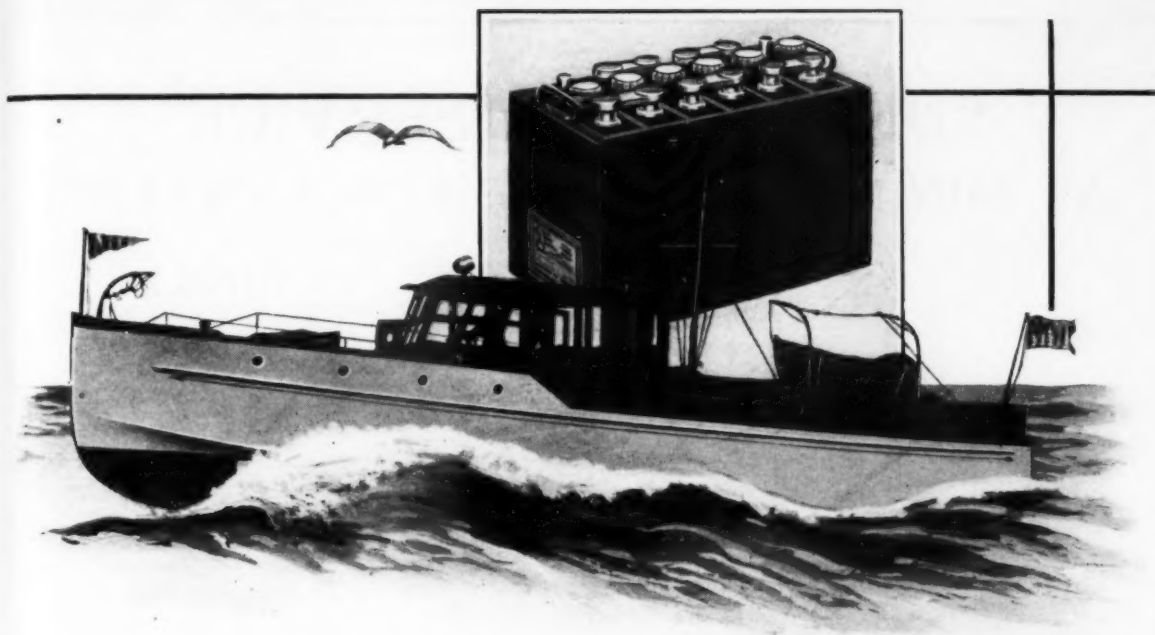
Valentine & Co. 45

W

Wells, John H. 68
 Westinghouse Union Battery Co. 147
 Westinghouse Electric & Mfg. Co. 122
 Wheeler Schebler Carburetor Co., The. 112
 Wilcox, Crittenden Co., Inc. 94-97-121
 Willis Co., E. J. 94
 Winton Engine Works. 106
 Wisconsin Motor Mfg. Co. 2
 Woolsey Paint & Color, C. A. 130
 Wood, B. F., Inc. 102-103
 Wood Gar., Inc. 82-83

Z

Zundel Co., Inc., R. W. 94



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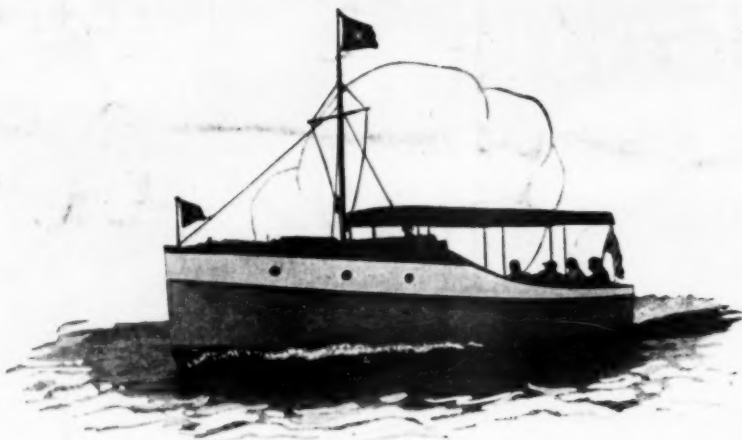
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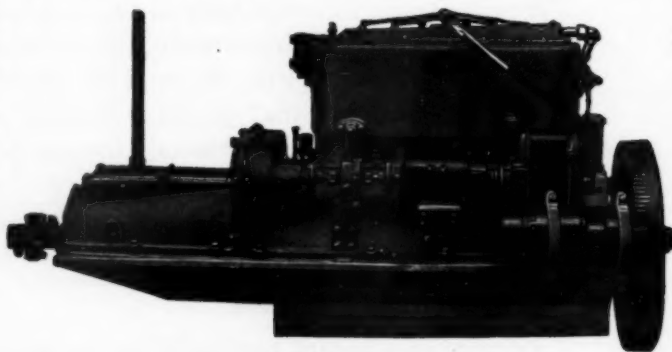


TINKER

28' x 8' 8 cabin cruiser owned by Mr. Alexander W. Moffat of 48 Geranium Street, Flushing, L. I. Built by Gray boats of Thomaston, Maine and powered with LN-42 Fay & Bowen engine.

Mr. Moffat writes under date of April 27th, 1922 explaining why he ordered a Fay & Bowen engine for the Tinker. His decision was based on his experience with Kittywink, a Fay & Bowen complete outfit. He says in part:

The history of this boat may interest you and explain why I stock to Fay & Bowen engines. After putting in a season at Lake George KITTYWINK was shipped to salt water where she was used hard for seven years. During that period there was not a part replaced and the boat gave uninterrupted service as a ferry launch. In 1920 I made a 250 mile non-stop run, half the distance in the open Atlantic, in sixteen hours and ten minutes to win a bet. The boat cost originally complete about \$2,000.00 Last year I sold her for \$1,500.00. This is a most unusual record of service for a runabout. The ordinary runabout not only does not stand up but brings a low resale price. My order to the builder for an LN-42 for my new cruiser TINKER crossed his letter of recommendation for the installation of a Fay & Bowen. During the past ten years I have cruised some thirty-five thousand miles on salt water with different makes of marine engines and have yet to find one which measures up to the Fay & Bowen for DEPENDABLE SERVICE AT THE MINIMUM EXPENSE FOR UPKEEP.



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